BRITISH DENTAL JOURNAL

VOL. XC, No. 8 APRIL 17, 1951

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April 17, 1951

BRITISH DENTAL JOURNAL

The Journal of the British Dental Association

(Incorporating the "Mouth Mirror" and the "Dental Gazette")

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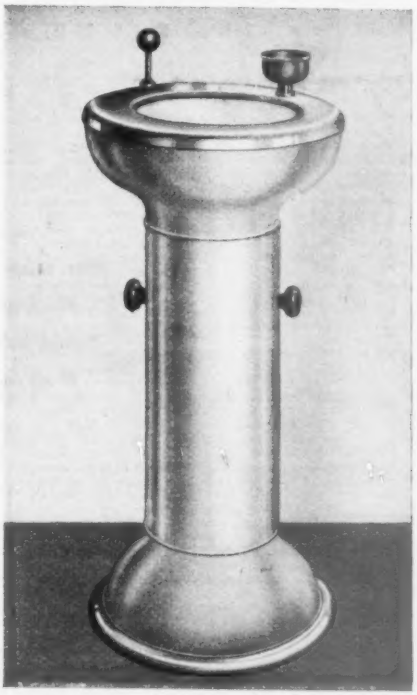

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PRACTICES for SALE and WANTED, PARTNERSHIPS, APPOINTMENTS and SITUATIONS VACANT: 30 words or less 20s. (21s. with a Box No.), each additional 6 words or less 4s. EQUIPMENT for SALE and WANTED, HOUSES and PROFESSIONAL PREMISES, HOTELS and APARTMENTS, MOTOR CARS, TRADE ANNOUNCEMENTS, DENTAL LABORATORIES and MISCELLANEOUS: 30 words or less 25s. (26s. with a Box No.), each additional 6 words or less 5s.

APPOINTMENTS and SITUATIONS WANTED: 24 words or less 12s. (13s. with a Box No.), each additional 6 words or less 3s. All small advertisements MUST be PREPAID before insertion.

Cheques and P.O. Orders should be made payable to the "British Dental Association," and crossed "Midland Bank."

Orders and remittances for advertisements must reach the Journal Manager at 13, Hill Street, Berkeley Square, London, W.1, at least 11 days before publication date. **Advertisements cannot be accepted by telephone.**

Replies to Box Numbers should be addressed Box No.—c/o B.D.J., 13, Hill Street, Berkeley Square, London, W.1. A Box Number is used in place of name and address to conceal identity of advertiser.

In no circumstances will this information be divulged by this office. Telephone messages for transmission to advertisers under Box Numbers cannot be accepted.

Members are requested before applying for any public dental appointments advertised in the lay Press to communicate with The Secretary, 13, Hill Street, Berkeley Square, London, W.1.

LECTURES

FACULTY of Dental Surgery (Royal College of Surgeons of England) and Institute of Dental Surgery (University of London). LECTURES in GENERAL, ORAL and DENTAL SURGERY. A series of lectures in General, Oral and Dental Surgery will be held at the College in Lincoln's Inn Fields from April 30 to June 1, 1951, at 5 p.m. and 6.15 p.m. CLINICAL DEMONSTRATIONS. Clinical demonstrations have been arranged to take place during the period of the lectures principally at Whittington Hospital, Highgate Hill, N.19. The clinical course is full time, but arrangements may be made in special cases for students to attend part-time. The fee for the whole course is £26 5s. The fee for the Lecture course is £8 8s. or 10s. for single lectures. Full details of these Courses may be obtained on application to the Secretary, Faculty of Dental Surgery, Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2. Tel: HOLborn 3474. W. F. Davis, Secretary, Faculty of Dental Surgery.

INSTITUTE of Dental Surgery (University of London). Eastman Dental Hospital, Gray's Inn Road, London, W.C.1. A lecture will be given by DR. MAURICE SMITH, D.D.S., of California, on "The Recognition of Various Types of Periodontoclasia and their Surgical and Non-surgical Treatment," at 5.30 p.m. on Thursday, April 26, 1951.

PUBLIC APPOINTMENTS

UNIVERSITY of Malaya. Applications are invited for the Chair of Conservative Dentistry. Salary £1,960 p.a. Expatriation allowance for overseas recruited staff £336 p.a. Cost of living allowance, £168—£420 p.a., according to personal circumstances. In addition, a sum will be paid in respect of fees, etc., to bring the total emoluments, inclusive of allowances, to £3,920 p.a. Free passages for appointee, wife and children under 10 years of age. Part furnished quarters (if available) at rent not exceeding 10 per cent of salary. Provident Fund Scheme on 10 per cent contributory basis. Applications (six copies) with names of three referees and full details of qualifications and experience should be sent to the Secretary, Inter-University Council for Higher Education in the Colonies, 1, Gordon Square, London, W.C.1, from whom further particulars may be obtained. Closing date April 30, 1951.

UNIVERSITY of St. Andrews. The University Court of the University of St. Andrews invites applications for appointment as LECTURER in PARODONTAL DISEASES and PREVENTIVE DENTISTRY in the Dental School, Dundee. The salary payable is £1,500 per annum rising by annual increments of £100 to a maximum of £2,000 per annum, together with F.S.S.U. benefits. The successful candidate will be required to reside in Dundee and it is expected that he will be offered an Honorary Hospital Appointment in the Dundee Dental Hospital. The University operates a scheme of Family Allowances and a grant towards expenses of removal may be made. Further particulars of the appointment may be obtained from the undersigned with whom one copy of the application together with testimonials and/or the names of three referees should be lodged not later than June 1, 1951. David J. B. Ritchie, Secretary, The University, St. Andrews. March 21, 1951.

BIRMINGHAM Regional Hospital Board. Applications invited appointment whole-time SENIOR HOSPITAL DENTAL OFFICER (a) Birmingham (Dudley Road) and Birmingham (Mental C) Groups; duties at hospitals in the Dudley Road Group and at Highcroft Hall Hospital. (b) Shrewsbury Group (6 notional half-days) and Wolverhampton Group (5 notional half-days). Candidates should have had considerable experience in specialty. Salary scale £1,300 x £50—£1,750 per annum. Appointments in accordance with "Terms and Conditions of Service" and subject to N.H.S. (Supn.) Regs. Fifteen copies applications stating name, age, nationality, qualifications, present and previous appointments, details of three referees to Secretary, 10, Augustus Road, Birmingham, 15, before May 7, 1951. Applicants for both appointments should forward 25 copies of applications. Canvassing will disqualify. Candidates may visit group hospitals.

ROYAL Dental Hospital of London School of Dental Surgery (University of London), Leicester Square, W.C.2. Applications are invited for the posts of (a) ASSISTANT DIRECTOR, CONSERVATION DEPARTMENT; six sessions each week, salary £900 x £60—£1,200 p.a., plus F.S.S.U. and f.a.; (b) ASSISTANT DIRECTOR, PROSTHETICS DEPARTMENT; 6 sessions each week, salary £775 x £60—£1,075 p.a., plus F.S.S.U. and f.a.; (c) DEMONSTRATORS in OPERATIVE DENTAL SURGERY, 2—6 sessions; ADVANCED OPERATIVE TECHNIQUE, 3—5 sessions; CHILDREN'S CONSERVATION, 6 sessions; JUNIOR CONSERVATION (Phantom Head Class), 5 sessions; PERIODONTOLOGY, 5 sessions; ORTHODONTICS, 3—5 sessions; PROSTHETICS, 2—6 sessions. Salaries on the scale £210 x £20—£270 p.a. for 2 sessions to £720 x £60—£900 for 6 sessions; (d) DEMONSTRATORS in EXTRACTION; 2 or more sessions each week, salary £1 11s. 6d. per session; (e) ASSISTANT PATHOLOGIST in charge of courses in DENTAL HISTOLOGY, £40 per course; (f) ASSISTANT DIRECTOR of TEACHING; 2 sessions each week, salary £260 x £20—£360. Sessions: for Demonstrators in Extraction, 1½ hours; for other appointments, morning sessions commence at 9 a.m., afternoon sessions commence at 2 p.m. Superannuation and family allowance will be granted where applicable. Appointments are tenable from September 1, and are subject to annual election in June. Present holders are eligible for re-election. Candidates, who must possess a registrable dental qualification, should forward 6 copies of their applications, together with the names of 3 referees not later than April 30, 1951, to the Dean.

EASTMAN Dental Hospital and Institute of Dental Surgery (University of London), Gray's Inn Road, W.C.1. Applications are invited for the following posts: (a) REGISTRAR in the DEPARTMENT of ORAL SURGERY. The person appointed will be required to reside in the Royal Free Hospital and, under the direction of the Consultants, will be required to attend to the patients in that Hospital as well as in the Eastman Dental Hospital. Salary £775 or £890 p.a., according to experience. Terms and conditions of service in accordance with M.O.H. Regulations. Application forms can be obtained from the Director to whom application should be made before April 28, 1951. (b) REGISTRAR (non-resident) in the DEPARTMENT of ORAL SURGERY. Salary £775 p.a. or £890 p.a. according to experience. Terms and conditions of service in accordance with M.O.H. Regulations. Application forms can be obtained from the Director to whom application should be made before April 28, 1951. (c) SENIOR REGISTRAR (non-resident) in the DEPARTMENT of ORTHODONTICS. Salary £1,000—£1,300 p.a. according to experience. Terms and conditions of service in accordance with M.O.H. Regulations. Full particulars and application forms obtainable from the Director.

UNIVERSITY of Bristol Dental Hospital. United Bristol Hospitals. Applications are invited for the post of SENIOR REGISTRAR in ORAL SURGERY. The appointment will be whole-time and the main duties attaching to the post will be in the Dental Hospital, but the candidate appointed may be required to perform duties in other Hospitals of the Group. The salary and terms and conditions of service will be as announced by the Ministry of Health, and the post will be subject to the National Health Service Superannuation Regulations. The appointment will be for a period of one year in the first instance, and will be renewable annually for two more years. Applications, stating full christian names, age, education, qualifications, experience, and giving the names of two referees, should be sent not later than May 12, 1951, to Secretary to the Board, Royal Infirmary Branch, Bristol, 2.

NORTH-WEST Metropolitan Regional Hospital Board. Highlands Hospital, Winchmore Hill, N.21. Senior Hospital Dental Officer. Applications are invited for the appointment of whole-time SENIOR HOSPITAL DENTAL OFFICER at the above hospital. This hospital, which has some 818 beds, has a small number of general medical and surgical beds, a large ortho-

paedic unit, and all the usual special departments. The hospital is in process of reorganisation as a district general hospital. The Terms and Conditions of Service for Hospital Medical and Dental Staffs will apply to the post. Applications, stating date of birth, qualifications and experience, with the names of three referees, should reach the Secretary, North-West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, not later than April 28, 1951. Canvassing will disqualify, but candidates are invited to visit the hospital by direct appointment with the Medical Superintendent.

EASTERN Regional Hospital Board, Scotland. Dental Hospital and Maryfield Hospital, Dundee. Applications are invited for an appointment as REGISTRAR in ORAL SURGERY at the above hospitals to work under the direct supervision of the Professor of Dental Surgery. Salary and Conditions of Service in accordance with National Agreement. Further particulars and forms of application may be had from the Secretary to the Board, 430, Blackness Road, Dundee, with whom applications must be lodged not later than May 8, 1951.

DUNDEE Dental Hospital. Applications are invited from Graduates or Licentiates in Dental Surgery for the whole-time non-resident appointment of SENIOR HOUSE OFFICER in the Dundee Dental Hospital. This post is recognised for the F.D.S. qualification. The salary will be at the rate of £670 per annum and the appointment is subject to the terms and conditions of service of Hospital Medical and Dental Staff. Applications, giving full particulars and the names and addresses of two referees should be sent to the Dean, Dundee Dental Hospital, Park Place, Dundee, from whom further particulars may be obtained.

SOUTH MANCHESTER H.M.C. Wythenshawe Hospital, Wythenshawe, Manchester. Applications are invited for the post of SENIOR HOUSE OFFICER (DENTAL) to the Dental Department of the Maxillo-Facial and Plastic Unit at the above Hospital. The post is suitable for experience for the Fellowship, resident and subject to Ministry of Health conditions of service. Salary £670 per annum, less deduction in respect of residential emoluments. Applications, stating age, qualifications, present post, previous appointments and names of two referees to be forwarded to the undersigned not later than April 23, 1951. A. H. Keates, Secretary to the Committee, Christie Hospital and Holt Radium Institute, Manchester, 20.

UNIVERSITY College Hospital, Gower Street, W.C.1. (Dental Department). Applications are invited for the following posts for six months from June 1, 1951. HOUSE SURGEON in the PROSTHETICS DEPARTMENT. HOUSE SURGEON in the ORTHODONTIC DEPARTMENT. Applications, together with the names of two referees, should be submitted to reach the Secretary not later than May 4, 1951.

DUNDEE Dental Hospital. Applications are invited from Graduates or Licentiates in Dental Surgery for the whole-time non-resident appointment of HOUSE SURGEON. The salary will be at the rate of £350 per annum and the appointment will be subject to the terms and conditions of service of Hospital Medical and Dental Staff. This is a teaching hospital of the University of St. Andrews and these appointments are recognised for the F.D.S. qualification. Applications should be forwarded with full particulars to the Dean, Dundee Dental Hospital, Dundee, from whom further particulars may be obtained.

COUNTY Council of Renfrew. School Health Service. Appointment of DENTAL OFFICERS. Applications are invited from registered Dental Practitioners for vacancies which exist in the School Dental Staff (including one with the Mobile Dental Unit). The salary scale applicable to the post is £850 by annual increments of £50 to £1,250. The appointments will be permanent and subject to the conditions of the Local Government Superannuation (Scotland) Act, 1937, and the successful applicants will require to pass a medical examination. Further particulars and application forms may be obtained from the County Medical Officer, 16, Back Sneddon Street, Paisley, with whom applications should be lodged as soon as possible. Robert Urquhart, County Clerk, County Buildings, Paisley.

WEST Sussex County Council. Appointment of two School Dental Officers. Applications are invited from registered Dental Practitioners for the appointment of two full-time SCHOOL DENTAL OFFICERS—one for the Borough of Worthing and one for the Chichester area. The present salary scale is £835 x £25 to £935 per annum, together with travelling expenses in accordance with the County Council scale in the case of the Chichester appointment. The salary scale will be subject to any revision which may be necessary in the light of decisions reached by any appropriate negotiating body. The appointment will be subject to the approval of the Ministry of Education. Further particulars and form of application may be obtained from the County Medical Officer, County Hall, Chichester, by whom all applications endorsed "School Dentist" on envelope should be received on or before May 4, 1951. Candidates are requested to state when applying for the form whether they desire to apply for the appointment in Worthing or Chichester, or either. T. C. Hayward, Clerk of the County Council. County Hall, Chichester.

COUNTY Council of Dumfries. Dental Officer. The Council invite applications from (male or female) Licentiates in Dental Surgery for appointment as DENTAL OFFICER. Salary scale £800 rising by annual increments of £50 to £1,250 per annum. The appointment will be subject to the Local Government Superannuation (Scotland) Act, 1937. Canvassing will be a disqualification. Full particulars and forms of application may be obtained from the undersigned with whom applications (on the prescribed form) must be lodged prior to 10 a.m. of Tuesday, May 1, 1951. J. C. Grant, County Clerk, County Buildings, Dumfries. March 30, 1951.

HERTFORDSHIRE County Council. Applications are invited from registered Dental Surgeons for appointment as whole-time ASSISTANT DENTAL OFFICER, for duties in connection with the County Dental Services. Salary in accordance with the Dental Whitley Scale, namely, £800 x £50—£1,250 per annum, the commencing salary to be determined by previous experience. Forms of application, obtainable from the County Medical Officer, County Hall, Hertford, should be returned within fourteen days of the date of publication of this advertisement.

HAMPSHIRE. Appointment of ASSISTANT COUNTY DENTAL OFFICERS. Applications are invited from registered Dental Surgeons (men or women) for the above positions on the staff of the County Medical Officer in the following areas: Alton, Andover, Basingstoke, Eastleigh (two), Fareham, Gosport (two), Totton and Waterlooville. Modern dental equipment, including Dental Units is available in the Central Clinics in these areas. Permanent dental equipment is provided for subsidiary clinics and where required mobile dental caravans are available. A revision of the present salary scale is under review in the light of the recent Whitley Council award. A travelling and subsistence allowance will be paid on the National Scale adopted by the County Council. The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937. Forms of application with particulars of the appointment may be obtained from the County Medical Officer, The Castle, Winchester, Hants, and should be returned to him not later than April 30, 1951. G. A. Wheatley, Clerk to the County Council. The Castle, Winchester. March 1951.

DENTIST wanted to practise privately in the Mull, Coll, Tiree, and Ardnamurchan area, Argyllshire, Scotland. New four-apartment house available and £1,000 interest-free loan to equip surgery can be arranged. Population 5,000—6,000. Reply to Town Clerk, Tobermory, Mull.

PRACTICES

Available

MIDLANDS. Good class practice, N.H.S. and private, capable of considerable expansion, in select residential area close to city boundary. Current gross income exceeds £3,000. Vendor retiring on account of ill-health. Excellent house with spacious garden and room for additional surgery if required. Purchase price to include leasehold property, goodwill and equipment. Offers over £5,500 invited. Inquiries in the first instance to A. Shaw, Premier Buildings, 88, Church Street, Liverpool.

FOR sale in Rochdale, old established registered practice and house—death vacancy.—Box 1800.

CHESHIRE. Dental practice and house for sale, well established. Turnover £5,000—£6,000, capable of increase. Handsome modernised detached house in 1½ acres of garden. Price £12,500.—Box 1802.

LUCRATIVE practice N.E. Yorks; surgeries pleasantly situated; excellent staff. Modern equipment (including X-ray) as new. Established 45 years—£9,000 last year. Owner retiring. £3,000 goodwill (including £2,000 equipment surgeries and workshop). House for sale, £3,000.—Box 1804.

SOUTH coast resort. Practice for sale. Corner house, small garden, large garage. Efficient staff would remain. Modern equipment and stock at valuation.—Box 1806.

PRACTITIONER desires to meet Dental Surgeon with view to taking over practice in exceptionally busy district in West London. Established 28 years.—Box 1808.

FOR sale. First class dental practice and admirable freehold house (properly adapted) in excellent residential area with good schools—15 miles from London.—Box 1810.

QUALIFIED practice for sale in congenial Surrey suburb. Cash turnover averaged over £2,700 up to 1949. Ample accommodation both private and professional in freehold house. Disposal due to retirement.—Box 1812.

FOR sale, near Rochdale. Old established registered practice, lock up premises to let, includes surgery, waiting room and workroom—death vacancy.—Box 1814.

TWO branch practices for sale with accommodation. Last twelve months, £9,000. Suit husband and wife operators, brothers or friends. Situated pleasant district South West Midlands.—Box 1816.

DENTAL BOARD OF THE UNITED KINGDOM

NOTICE OF ELECTION

DENTISTS ACTS, 1921 & 1923

(11 & 12 Geo. V. Chap. 21; 13 & 14 Geo. V. Chap. 26)

NOTICE IS HEREBY GIVEN That pursuant to the Dentists Acts, 1921 and 1923, an ELECTION OF TWO MEMBERS of the DENTAL BOARD OF THE UNITED KINGDOM to REPRESENT the QUALIFIED dentists(1) practising in England and Wales is about to be held.

One candidate only may be nominated on a nomination paper.

Every qualified dentist practising in England or Wales is entitled to take part in nominating two candidates.

Every nomination paper must state the name, address, and title to registration and additional qualifications (if any) or occupation of the candidate nominated; not less than twelve qualified dentists practising in England or Wales must nominate the candidate, either on one nomination paper signed by twelve or on two nomination papers each signed by six; and the registered address and title to registration and additional qualifications of each one so signing must be appended to his signature.

Every nomination paper and a declaration in writing signed by the person nominated acknowledging that he consents to be nominated must be delivered by prepaid post or by hand on or before NOON on WEDNESDAY, the 16th day of MAY, 1951, to the RETURNING OFFICER, DENTAL BOARD OF THE UNITED KINGDOM, at 44 Hallam Street, London, W.1, from whom forms of nomination papers and of declarations may be obtained on application.

Every nomination paper or declaration in respect of which any of these requirements has not been complied with, or which is not received at the address given above by the hour mentioned, will be invalid.

(*Signed*) E. WILFRED FISH,
Returning Officer.

Dated 17 *April*, 1951.

(1) NOTE.—The expression "qualified dentist" is that used in the Dentists Act, 1921, to signify a person registered under the Dentists Act, 1878, otherwise than by virtue of a right conferred by or under the provisions of the Dentists Acts, 1921 and 1923. Dentists Act, 1921, First Schedule, paragraph 4.

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One candidate only may be nominated on a nomination paper.

Every qualified dentist practising in Ireland is entitled to take part in nominating one candidate.

Every nomination paper must state the name, address, and title to registration and additional qualifications (if any) or occupation of the candidate nominated; not less than twelve qualified dentists practising in Ireland must nominate the candidate, either on one nomination paper signed by twelve or on two nomination papers each signed by six; and the registered address and title to registration and additional qualifications of each one so signing must be appended to his signature.

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One candiate only may be nominated on a nomination paper.

Every qualified dentist practising in Scotland is entitled to take part in nominating one candidate.

Every nomination paper must state the name, address, and title to registration and additional qualifications (if any) or occupation of the candidate nominated; not less than twelve qualified dentists practising in Scotland must nominate the candidate, either on one nomination paper signed by twelve or on two nomination papers each signed by six; and the registered address and title to registration and additional qualifications of each one so signing must be appended to his signature.

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(11 & 12 Geo. V. Chap. 21; 13 & 14 Geo. V. Chap. 26)

NOTICE IS HEREBY GIVEN That pursuant to the Dentists Acts, 1921 and 1923, an ELECTION OF TWO MEMBERS of the DENTAL BOARD OF THE UNITED KINGDOM to REPRESENT the dentists entered on the Dentists Register as "Dentists Act, 1921," is about to be held.

One candidate only may be nominated on a nomination paper.

Every dentist entered on the Dentists Register as "Dentists Act, 1921," is entitled to take part in nominating two candidates.

Every nomination paper must state the name, address, and title to registration and additional qualifications (if any) or occupation of the candidate nominated; not less than twelve dentists entered on the Dentists Register as "Dentists Act, 1921," must nominate the candidate, either on one nomination paper signed by twelve or on two nomination papers each signed by six; and the registered address and title to registration and additional qualifications of each one so signing must be appended to his signature.

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Returning Officer.

Dated 17 *April*, 1951.

S. E. Coast. Part-time, lock up, practice grossing £3,000, plenty scope increase; also fine modern 4 bedroomed house best residential avenue, oak floors throughout, detached garage. House and practice, £5,000.—Box 1820.

FOR disposal. Old, well established and busy practice. East Midlands. 2 hours (rail) London. Mainly N.H.S. but some private. 2 complete modern surgeries and workshops. Excellent family living accommodation. Garage. Convenient terms.—Box 1508.

OLD established practice in charming and unique S.E. Coast market town. 2 miles from sea. Attractive old house on excellent lease terms—about 38 years to run. Surgery, waiting room, mechanical laboratory, with excellent technician. Living accommodation, small garden, toolshed, greenhouse, if required. Turnover approximately £4,000; low expenses. All books audited. Price goodwill, equipment, lease, £5,500, inclusive.—Box 1510.

Wanted

EXPERIENCED Dental Surgeon, senior partner in large practice South London, having disposed of his interest from June 30, seeks something smaller. Would be interested to hear of practice or suitable premises available, in pleasant surroundings, in town near country or sea, Southern Counties. Would purchase branch, or manage with view to purchase, practice in similar locality.—Box 1532.

DENTAL Surgeon requires practice in South West Lancs or North Cheshire.—Box 1822.

WANTED to purchase about September, a practice, southern part of England away from London. Would like to take over from someone retiring.—Box 1824.

L.D.S. wishes to purchase established practice with percentage of private patients. Living accommodation, preferably in same house, essential. Any town in South or South East England. —Box 1826.

DENTAL Surgeon wishes to purchase a practice, with living accommodation, in South West England. Would exchange his old established London practice, ample living accommodation, or sell.—Box 1534.

PRACTICE required. Preferably Halifax, Huddersfield area, or coast Lancashire or Yorkshire. Must be capable of expansion. Freehold premises, lock-up or otherwise.—Box 1536.

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HOUSE, garage and equipped surgery, and waiting room, for sale in pleasant surroundings in good class residential part of West End. Very accessible position; Old established. Excellent opportunity for Dental Surgeon desirous of maintaining good standard. Terms out of income.—Box 1828.

ATTRACTIVE modern house in prosperous suburb north of London, with equipped dental surgery to be sold, freehold. Excellent opportunity and scope.—Box 1830.

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ACCOMMODATION ideal Dentist's surgery with ultra modern flat, if desired, adjoining. Industrial suburb London. Corner site. Rental £250 p.a. with flat. Telephone. after 8 p.m., Barnet 7154 or write—Box 1669.

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PARTNERSHIP with view to succession for Dental Surgeon in long established Liverpool practice; short trial period; accommodation available. Apply, giving age, experience, etc., W. T. Walton & Son, Incorporated Accountants, 9, Rumford Street, Liverpool, 2.

DENTAL Surgeon, taking half share in very large practice, London suburb, Kent, requires another to take remaining part (principal going abroad), or alternatively an assistant with partnership after short probationary period. Payment out of income if required. Practice turnover last two years each well over five figures. Very reasonable figure only required for partnership.—Box 1840.

QUARTER partnership offered in busy good class practice in S.E. market town. Well equipped and staffed. Can be financed out of income.—Box 1842.

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DENTAL Surgeon required as assistant in Shropshire market town. Good salary, plus bonus; five day week.—Box 1846.

HOME Counties, 30 miles from London. Dental Surgeon (either sex) required in old established modernly equipped practice, immediately. Generous salary.—Box 1848.

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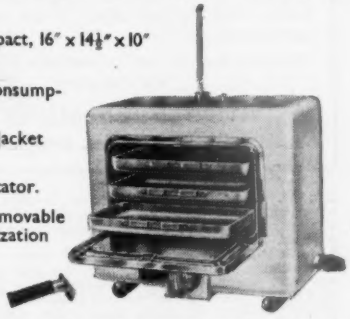

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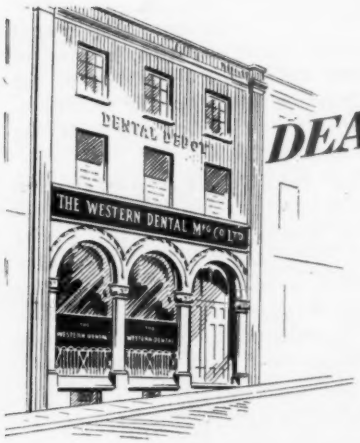

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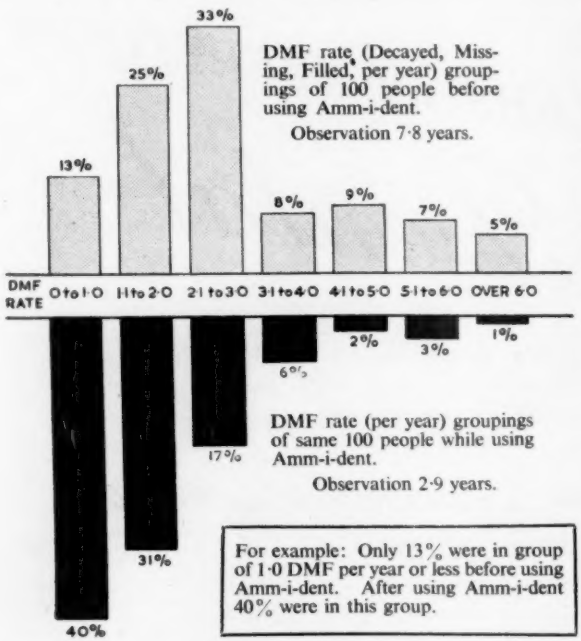

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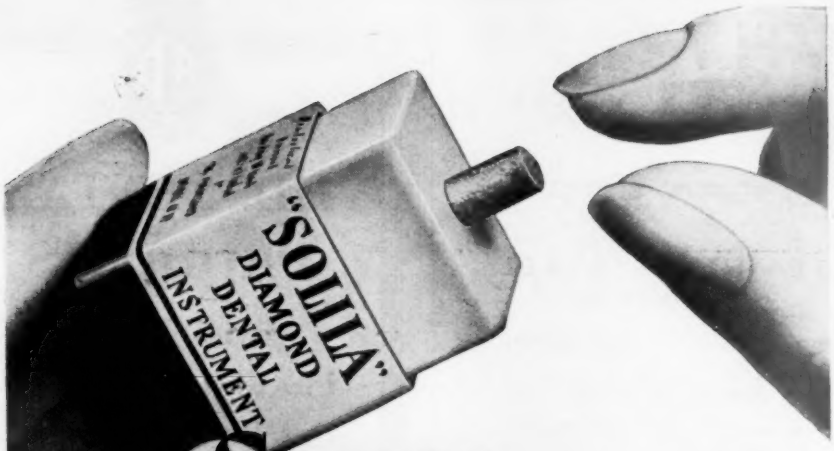

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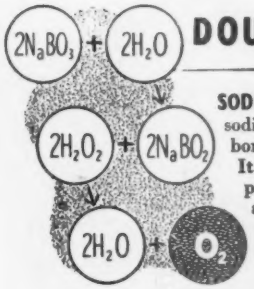

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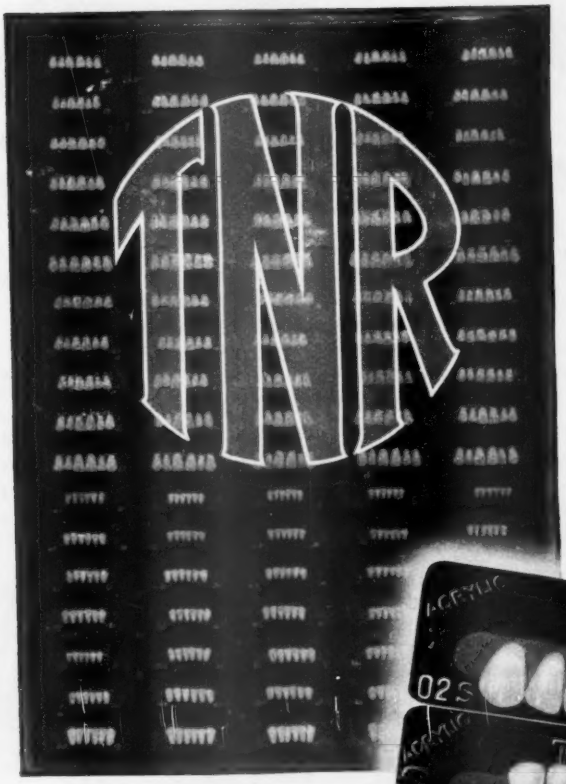

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BRITISH DENTAL JOURNAL

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ORIGINAL COMMUNICATIONS

ENZYMES IN DENTINE AND PULP: EFFECT OF FLUORIDE

BY P. PINCUS, D.D.SC.MELB., F.D.S. R.C.S.ENG.

Physiology Dept., Medical School, Middlesex Hospital, London

IN the *Brit. dent. J.*, **89**, 143, I have described observations on the human dental pulp, which was found to " respire " in the sense that it takes up oxygen, gives off carbon dioxide and can utilise glucose. Such biochemical actions are brought about by enzymes present in the pulp though at that stage no attempt was made to identify a particular enzyme.

This work has now been extended to include reference to particular enzymes in both dentine and pulp. Some observations on the effect of a dental filling material have also been made. It is seen that the filling material interferes with " respiration " in the dentine.

Enzymes have previously been described in the dentine. Both histochemical and biochemical methods have been used to demonstrate phosphatase in dentine since 1924 when Robison and Soames worked on this problem—followed by Mackenzie. However, phosphatase cannot be responsible for the phenomena described in the present work.

THEORETICAL

An enzyme system involved in utilisation of oxygen is that of an oxidase with a dehydrogenase. The enzymes known as dehydrogenases are represented in all living tissues. They bring about oxidations indirectly by transferring (activated) hydrogen from substrate to a suitable acceptor (Fearon, 1948).

Dentine is now found to contain oxidase and dehydrogenase and thus in this limited sense, dentine may be said to " respire." Such an observation might remain of academic interest only but for the fact that a commonly used filling material has been found to interfere with the " respiration " of dentine. This remark may also apply to topical applications of fluoride.

The clinical observations that some " porcelain-type " fillings desensitise dentine and even " kill the pulp " may in part rest on the fact that some such materials contain fluoride which can be liberated from the cement filling as inserted into the tooth. Fluoride is known to interfere with the action of some enzymes. Quastel and Wooldridge (1927) showed that succinic dehydrogenase was inhibited by fluoride; in the present work, this enzyme system has been found present in dentine.

While it is suspected that fluoride causes the interference with enzyme action described below, other possibilities cannot be excluded on the evidence so far available.

EXPERIMENTAL

Enzymes are proteins and are soluble in aqueous media under suitable conditions of pH and temperature. Nevertheless the results described below have only been attained with solid material, i.e. dentine powder. Other methods might be found capable of giving identical results with extracts of dentine in aqueous media. The idea here was to obtain a clear-cut result reasonably quickly. However, the actual handling of tooth material presents technical difficulties. For example, Atkinson and Matthews (1948) point out that, presumably by the use of chromatography, it has not been possible to demonstrate the presence of *chondrosamine* in hydrolysates of human dentine. However, Immers and Vasseur (1950), working on polysaccharides, reported that examinations for *hexosamine* by the use of chromatography were found to be negative though positive results were obtained by the colorimetric method of Elson and Morgan on the same material. The latter method has been relied on in the present work.

Teeth which had never had dental (filling) treatment were freed from blood, tartar and soft tissue, dried at 37° and separated at the gingival margin into roots and crowns ; crowns

were discarded. Roots were cleaned of pulp and cementum and reduced to 180–200 mesh powder, one such sample by Parke, Davis and Co., another by Burroughs, Wellcome and Co. These facilities were most welcome and are greatly appreciated. The resulting powders are referred to below as dentine powder ; there was little difference in their behaviour.

(*a*) *Oxidase in Dentine*

Tests were made for the presence of an oxidase in dentine powder : suspensions of dry dentine powder (0·2 grm.) in 5·0 ml. distilled water were made. The addition of 0·2 ml. alcoholic solution of alpha-naphthol with 0·5 ml. H_2O_2 produced a lavender colour, showing the presence of an oxidase. Identical suspensions of dentine powder in distilled water were then made and heated to 100° for 60 minutes, when addition of alpha-naphthol and H_2O_2 gave no lavender colour showing that the oxidase was inactivated by heat. Other tests were made on suspensions of dentine powder in water by the addition of *O-tolidine* and benzidine, but results were negative.

It is concluded that an oxidase is present in dentine.

(*b*) *Dehydrogenase in Dentine*

Preliminary tests suggested the presence of a dehydrogenase, since suspensions of dentine powder in water reduced methylene-blue and also 2 : 6-dichlorophenol indophenol. Later it was found that suspensions of dentine powder in agar reduced methylene-blue, as suggested for other body tissues by Friedemann and Hollander (1942), and repeated trials of the method were made. The method finally adopted was to heat a 2 per cent w/v agar preparation in distilled water by suspending it in a boiling water bath for about an hour. Centrifuge tubes each holding 10 ml. were kept at 45° in a water bath. To each tube was added 0·1 ml. 0·002-M methylene blue, then 2·0 ml. melted agar by a heated syringe minus needle, then 0·1 ml. substrate, e.g. N–1 pyruvic acid, finally 0·2 grm. dry dentine powder. The mass (kept at 45°) was stirred vigorously then cooled until set under tap-water at about 20°. Tests were carried out at 37°.

Under these conditions, methylene-blue was reduced in about 45 minutes, showing the presence of a dehydrogenase system utilising pyruvate. Controls were also carried out (*see* below). Tests were carried out using other samples of pyruvic acid ; results varied little. Further tests were carried out using other substrates in place of pyruvate. Results showed in the increase of reduction times that pyruvate < succinate < citrate < malate while lactate gave doubtful results and tartrate was negative.

The demonstration of succinic dehydrogenase in dentine powder was rendered clear cut by the addition of malonate, known to be a specific inhibitor of this enzyme. Details of a typical experiment follow :

TABLE I

Methylene-blue 0·002 M	2% *w/v agar*	*Dentine powder*	*Na succinate* 0·01-M	*Na malonate* 0·1-M
0·1 ml.	2·0 ml.	0·2 grm.	0·1 ml.	0·1 ml.

No reduction was seen in 90 minutes at 37° against practically complete reduction seen in about 60 minutes in tests identical except for the omission of malonate.

Suspensions of dentine powder in distilled water, and a number of agar preparations containing dentine powder, were tested for inactivation after exposure to heat (boiling water bath). It was found that while reduction of methylene-blue was partial after 30 or 45 minutes at 100°, reduction was completely inactivated after 60 minutes, after 90 minutes and after 120 minutes at 100°.

Tests were also carried out after heating dentine powder for 24 hours at 37° and for 24 hours at 50°. It was found that after heating at 50° for 24 hours there was about 10 per cent delay in the reduction time of methylene-blue as compared with that of an unheated control. Dentine powder reduced methylene-blue in an agar gel prepared as above, but without the addition of pyruvic acid, in about 90 minutes ; however the addition of pyruvic acid shortened this time to about 45 minutes. It is concluded that a dehydrogenase system utilising pyruvate is present in dentine powder. Tests showed that agar with either pyruvate, succinate, citrate or malate, did not reduce methylene-blue in the absence of dentine powder.

(*c*) *Dehydrogenase in Pulp*

Experiments were then carried out on human tooth pulps. Healthy teeth were cracked open, pulp tissue removed and examined carefully. Only those pulps appearing normal were used. The collection of pulp tissue was dried between filter paper, weighed wet, then ground with 2 ml. of normal saline and a little clean sand. When liquid, the mass was allowed to stand so that the sand separated out and the supernatant liquid was used for test. Most tests were complete within a couple of hours after extraction of the teeth from the mouth. This part of the work was somewhat protracted since it often happened that a day's collection of extracted teeth did not yield pulp material adequate in amount for a test.

Results of a typical test are shown :

TABLE II

Methylene-blue 0·002-M	2% *agar w/v*	*Na succinate M*-10	*Pulp mass wet weight*
0·03 ml.	2·0 ml.	0·3 ml.	73·0 mg.

Reduction of methylene-blue was complete in about 2 hours at 37°, so that a succinic dehydrogenase is present in pulp (*see* below).

(*d*) *Inactivation of Dentine Dehydrogenase*

(1) *Bacterial.*—The primary aim of the present work is caries research and accordingly some bacteria possibly involved in caries were obtained in pure culture : gram-negative bacilli, gram-positive cocci and bacilli. The effects of the addition to dentine powder of cultures (as far as reduction of methylene-blue is concerned) were found to be variable, and results are omitted.

(2) *Chemical.*—Tests were then carried out on the effects of some filling materials on time of reduction of methylene-blue by dentine powder.

A cement commonly used for filling anterior teeth was tested. It was found that neither the powder nor the liquid alone affected reduction time in various tests except when the concentration of acid materially affected the pH value of the mass (agar gel). Mixtures of powder and liquid, however, were found to affect reduction time of methylene-blue by dentine powder. Tests were carried out : 0·1 ml. cement liquid was mixed with 5 ml., distilled water, then 100 mg. cement powder added and the mass shaken vigorously. Tenfold dilutions of the supernatant liquid were then made, the undiluted original being termed A°, then A^{-1} was one-tenth the concentration, A^{-2} one-hundredth, and A^{-3} one-thousandth.

As described above, tubes of substances under test contained : 0·1 ml., 0·002-M methylene-blue, 2·0 ml. 2 per cent w/v melted agar, 0·1 ml., N–1 pyruvic acid, 0·2 grm., dry dentine powder, with 1·0 ml., either of A°, A^{-1}, A^{-2}, A^{-3}. The pH value of these test mixtures was respectively 5·0, 7·0, 7·0, 7·0, to B.D.H. universal indicator.

TABLE III

Results of incubating test mixtures for 60 minutes at 37°.

Test	*Reduction of methylene-blue*	*pH value to B.D.H. universal indicator*	*Approximate fluorine content of mass (calculated — see below)*
A°	negative or ?	5·0	10^{-4}
A^{-1}	trace only	7·0	10^{-5}
A^{-2}	+	7·0	10^{-6}
A^{-3}	++	7·0	10^{-7}

The fluorine content was calculated from the data given on page 114, of the U.S.A. circular C 433, 1942, and is approximate only.

It is seen from the results set out in Table III that there is delay in the reducing power of dentine powder towards methylene-blue after the addition of a mixture of cement powder and liquid. Part of this delay may be due to the presence of acid, but it is seen that tests using A^{-1}, A^{-2}, and A^{-3} were carried out at pH 7·0. From these tests it appears that delay in reduction time of methylene-blue is not entirely due to the acid present.

From consideration of circular C 433 and the work of Smith (1946) it seemed that fluoride was possibly present in the cement powder actually under test and an examination was made. The cement powder was tested qualitatively for fluoride, using tests described by Vogel (1948). In the first of these tests use is made of the formation of silicic and fluorosilicic acids with subsequent reaction with ammonium molybdate. Benzidine in acetic acid produces molybdenum blue with these acids.

When one particular cement powder was tested by this method, a blue colour was seen, more marked after keeping overnight at 37°. Tests of reagents alone gave negative results showing no blue colour ; the distilled water used throughout was also negative for fluoride with this test, though traces of sodium fluoride gave blue colour.

Vogel also describes a method for the detection of fluoride in which the unknown substance is exposed to concentrated sulphuric acid and gentle heat. Cement powder was mixed with concentrated sulphuric acid in a platinum crucible while a glass slide coated with wax was placed on top after some scratches had been made in the wax with a wood point. It was seen that after the use of gentle heat the glass was etched, and part of the slide is shown in fig. 1.

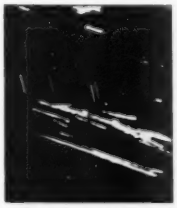


FIG. 1.—Glass etched by hydrofluoric acid fumes given off by dental cement powder heated with sulphuric acid. Original × *ca.* 4.

Both these tests are specific, and it is then clear that fluoride is present in the cement

powder under test. Some quantitative details from other sources are given in the Discussion below.

(3) *Inactivation of Dentine Powder by Heat and by Acids.*—Evidence of the inactivation of a dehydrogenase system utilising pyruvate in dentine powder by the use of heat has been given above. Some tests of the effect of acids were carried out. Difficulty was met in making observations of pH value in the presence of solid tooth material (dentine) which contains protein and calcium phosphate, though it appeared from preliminary trials that acids interfered with enzymatic activity. Results are then inconclusive, in respect of inhibition by acid.

(4) *Biochemical Inactivation of Dehyrogenase of Pulp.*—The presence of a succinic dehydrogenase in pulp has been described above and results shown in Table II. Malonate has been used to inhibit this enzyme in pulp, and description of a typical test follows :

TABLE IV

Methylene-blue 0·001-M	2% *w/v agar*	*Na succinate* 0·01-M	*Na malonate* 0·1-M	*Pulp mass wet weight*
0·03 ml.	0·5 ml.	0·2 ml.	0·1 ml.	37·0 mg.

In this experiment no reduction of methylene-blue was seen in two hours. The quantities of methylene-blue and of agar were reduced as much as possible ; it is to be remembered that pulp tissue loses about 80 per cent of its weight on being dried, so that little actual pulp material is present, and of this the enzyme forms but a small part. As used, the present method does not allow for experiments on a smaller scale.

(5) *Inactivation of Dehydrogenase of Pulp by Acid.*—Collections of pulp tissue were tested at various pH levels : 7·0, 6·0, 5·0, 4·5, 4·0. It was found that reduction of methylene-blue did not occur when the pH value of the mass was below 4·5. At a value of 5·0, there was delay in reduction time of methylene-blue. From these tests it is seen that the dehydrogenase present in human pulp is inactivated near a pH value of 4·5.

Discussion

From the clinical aspect, the question of the " vitality " of the dentine is of interest. Fish (1933) has shown that the whole tubular system of the dentine is normally in fluid communication with the pulp, giving point to the observations of Hunter (quoted by Fish), " they (the teeth) have most certainly a living principle by which means they make part of the body." Tomes (also quoted by Fish) states that " in caries a portion of the dentine loses its vitality." The enzymes in dentine may be associated with the tubules while these in turn communicate with the pulp. While only two enzyme systems are examined above, further work may provide evidence bearing on the histopathology of dentine, and connecting it with biochemical aspects and the above mentioned work of Fish.

Turning now to factors interfering with enzyme action in dentine, examination of a cement is of interest. The analysis of dental cement powder carried out by the U.S. Department of Commerce, National Bureau of Standards, is of detailed nature, ranging as it does (p. 115) from major constituents down to spectrochemical analysis and including elements present in traces only. Indicating the general direction of thought in 1942, the U.S.A. specification for a dental cement powder included a limit for arsenic (1 part in 500,000) though none was given for fluoride. Table 43 (loc. cit.) gave a quantitative analysis of nine silicate cement powders with fluorine contents ranging from 5·9 to 15·4 percentage by weight (the fluorine being in combined form). Also present are lead, tin, magnesium, and other elements, some only in traces. Any effects these may have on the enzymes examined in the present work, are unknown.

Tests described above show that neither cement powder alone nor cement liquid alone affected reduction time of methylene-blue, except when effects due to acid were noted. A mixture of powder and liquid, however, delayed reduction time showing that an inhibiting substance was present after the mixing. The fluoride ion falls into this category, though the combination known as silicofluoride may be formed.

If silicofluoride ions are present then, with alkaline conditions, silicate will be formed, releasing fluoride ions. The pH value of dentine is alkaline (8·1) determined on aqueous extracts of dentine powder by the glass electrode, and thus confirming Grossman (1940), though in such estimations the presence of reducing effects in the dentine should be taken into consideration. In *Nature, Lond.* (1950) **166**, 187, I have described the separation from dentine of a polysaccharide which on hydrolysis liberates reducing substances. However, in the experiments described above it was found that the reducing power of dentine powder gradually lessened on exposure to a temperature of 100° and eventually disappeared altogether. This result suggests that an enzyme system is involved, rather than reducing substances.

The fact that the exposure to heat found necessary to inactivate dehydrogenase in the

present work is much longer than that usually needed to inactivate such enzymes in other tissues, is attributed either to a "shielding" action by some of the other constituents of dentine powder, or possibly also to the state of combination of enzyme with substances present, such as calcium phosphate or collagen.

It is generally accepted that silicate cements irritate pulps though Paffenbarger (1942, Circular No. C 433) records that "a group of 106 dentists were asked : do you believe that the silicate cements are more irritant to the pulp than other restorative materials ? About 45 per cent replied no, 45 per cent yes, with 10 per cent undecided. In other words clinical experience has failed to provide a definite answer to the question." Smith (1946) states: With regard to the irritation produced by the phosphate and silicate cements there has been much difference of opinion, one reason of which is that considerable damage may be done without pain.

Fillings such as those referred to above will at most liberate extremely small amounts of fluoride but it is the slow liberation over a long period which may have undesirable effects thus rendering the protection of a lining essential.

Not unexpectedly, acids were found to inactivate the dehydrogenase present in pulp. Any part that may be played by a similar action in the carious process is unknown.

Reduction of dentine to powder involves heat, which can inactivate enzymes and has been briefly discussed above.

Effects due to the use of stones and burs in clinical practice might then be studied in this regard.

It is seen that another link is present between observations on the pathology of dentine and pulp and the biochemical processes underlying these observations, though these latter are not examined exhaustively above.

Summary

Human dentine contains enzyme systems of which the actions of two are described : oxidase and dehydrogenase. These enzyme systems are inactivated by heat, to some extent by acids and by a mixture of dental cement powder and liquid. This cement powder contains fluoride, known to be an enzyme poison and known to inactivate some of the enzymes here investigated. The succinic dehydrogenase present in pulp is inactivated by acid ; Malonate has been found to inactivate the succinic dehydrogenase present in both dentine and in pulp. This test being specific for this enzyme, serves to identify it.

Acknowledgments

My thanks are due to my colleagues at the Hospital, and to The Medical Research Council for financial assistance.

References

ATKINSON, H. F., and MATTHEWS, E. (1949) *Brit. dent. J.*, **86**, 167.
Circular No. C.433 (1942) U.S.A. National Bureau of Standards, U.S. Government Printing Office.
FEARON, W. R. (1948) Introduction to Biochemistry. Heinemann, London.
FISH, E. W. (1933) Experimental Investigation of Dentine and Dental Pulp. J. Bale and Sons, London.
FRIEDEMANN, U., and HOLLANDER, A. (1942) *J. Lab. Clin. Med.*, **28**, 353.
GROSSMAN, L. I. (1940) *J. dent. Res.*, **19**, 171.
IMMERS, J., and VASSEUR, E. (1950) *Nature, Lond.*, **165**, 898.
MACKENZIE, A. S. E. (1933) *Brit. dent. J.*, **54**, 153.
PINCUS, P. (1950) *Brit. dent. J.*, **89**, 143.
——, (1950) *Nature*, Lond., **166**, 187.
QUASTEL, J. H., and WOOLDRIDGE, W. R. (1927) *Biochem. J.*, **21**, 1224.
ROBISON, R., and SOAMES, K. (1924) *Biochem. J.*, **18**, 740.
SMITH, J. C. (1946) Chemistry and Metallurgy of Dental Materials. Blackwell, London.
VOGEL, A. I. (1948) Qualitative Chemical Analysis. Longmans, Green, London.

PRECIPITATION-HARDENING OF METALS

By A. G. DOWSON, M.A., Ph.D., F.I.M.

Precipitation-hardening, often referred to as age-hardening, and sometimes, erroneously, as temper-hardening, is a phenomenon of considerable value to metal workers, including dentists. Briefly, the precipitation-hardening process consists in quenching the metal from a suitable high temperature, followed by reheating for a period of time at some lower temperature. In the quenched condition the metal is relatively soft and ductile, and any manipulation can readily be done. The second heating process then causes the metal to harden, giving it greater strength and resilience. If the article in question has to be soldered, it is inevitably softened during the soldering operation, and alloys which are hardenable by heat-treatment have a great advantage over alloys which can only be hardened by cold working. It might be of some interest to examine briefly the phenomenon of hardness in metals in order to achieve better understanding of the precipitation-hardening process.

What is Hardness?

In a general way, the term hardness is readily understood, but when one tries to be more precise, and particularly when quantitative measurement of the property is required, it becomes apparent that there are a number of different conceptions which do not necessarily go hand-in-hand. For example, resistance to indentation is one form of hardness, resistance to abrasion, i.e. scratch hardness, is another. These two types of hardness are usually related to each other if similar materials are being considered, but the relationship may break down altogether if materials of completely different types are compared. Scratch hardness is frequently used in connexion with minerals, and an arbitrary scale, Mohs' scale, is based on the ability of the "harder" materials to scratch the softer ones. The softest mineral, talc, is number one, and the hardest, diamond, number ten. The scale is not commonly used for metals, although, in certain cases, some form of abrasion or wear-resistance test gives a more appropriate measure of the usefulness of the metal for a particular application. For example, the quality of the hard, osmiridium tip on fountain pen nibs is a function of the abrasion-resistance. Indentation hardness, however, is the property more usually measured where metals are concerned.

Indentation Hardness Testing

The test consists essentially in making an indentation with a weighted indentor on a flat polished surface of the metal, and measuring the extent of the impression. A steel ball is one type of indentor, but the more up-to-date instruments use a pyramidal diamond. In this latter case the impression is of square section, and the diagonals are measured. The hardness value, which varies inversely with the area of the impression, is expressed as a number, preceded by DH/W (short for Diamond Hardness), W being the weight, in kilogrammes, on the indentor. V.P.N. (Vickers Pyramid Number) and Brinell are also used. The latter relates to the steel ball indentor, but up to hardness values of about 400 the two scales are almost identical.

The hardness of a metal is generally related to its strength, but, as with the various types of hardness, a direct relation exists only when similar materials are being compared.

What Controls Hardness?

A fuller understanding of hardness requires some knowledge of the fundamental structure of metals. A pure metal can be pictured as a number of atoms distributed in a regular pattern in space. This arrangement is called the space lattice, and a two-dimensional representation is shown in fig. 1.[1] The hardness and

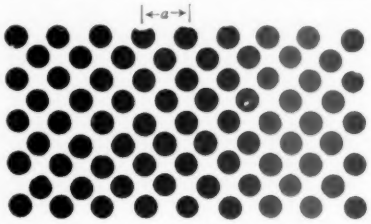


Fig. 1.—Illustrating space lattice of a pure metal.

strength of the metal are controlled by the difficulty, or ease, with which the space lattice can be distorted.

When stress is first applied the lattice is pulled slightly out of shape, but returns to its original condition when the stress is released. This deformation is called "elastic strain." If there is greater stress than the lattice can bear elastically, permanent deformation takes place. This normally occurs by a process known as "slip" which involves the movement of one part of the lattice relative to the other by one or more lattice space units. This is represented in fig. 2. To increase the strength of the metal, it

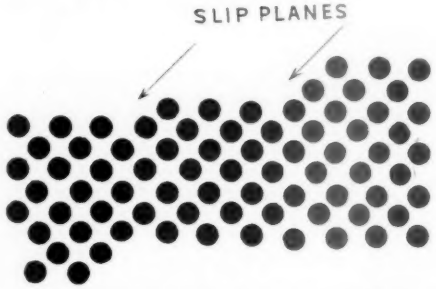


Fig. 2.—Illustrating "slip" in a pure metal lattice.

is necessary to increase the resistance to slip, and this can be achieved in a number of ways.

(1) *Cold-working.*—If a metal is permanently deformed, i.e. the lattice caused to undergo slip, it develops increased resistance to further deformation. This process is not fully understood, but it is believed to be connected with the presence of residual strain in the lattice, after slip has taken place. Its practical consequences are, of course, well known. If a soft wire is drawn to a smaller size it becomes harder and

[1]The dimension "a," known as the lattice constant, is normally expressed in Angström units (cm. × 10^{-8}). For gold "a" is 4·07 A and for platinum "a" is 3·92 A. This means that, for these metals, there are some 25 million atoms per linear centimetre.

stronger ; it also becomes less ductile and in the end becomes so brittle that it cannot be bent or formed without fracture. There are few of us who do not, at some time or another, make use of this phenomenon to break a piece of metal by repeated bending and straightening.

(2) *Hardening by Alloying.*—If a second metal is alloyed with the first metal, the solute atoms first enter the lattice by replacing atoms of the basis metal. Since the atoms of different metals have different sizes, the atom of the second metal distorts the lattice somewhat, as indicated by fig. 3, and the effect of this distortion is to make

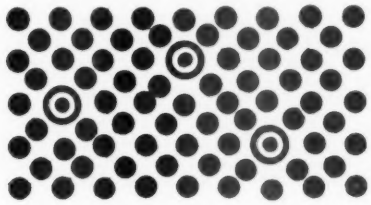


FIG. 3.—Illustrating distortion of space lattice by larger solute atoms.

slip more difficult by a sort of keying action. If the quantity of alloying element is progressively increased, and the size of the two atoms is markedly different, the lattice becomes saturated with the second metal, and further additions result in the appearance of a second phase, i.e. a new type of crystal having a lattice based on that of a second metal. Figs. 4 and 5 show structures as seen under the microscope, typical of pure metals and solid solution alloys, (fig. 4), and two phase alloys, (fig. 5). The presence of a second phase also serves to increase the bulk strength of the metal, but is less effective than dissolved alloy additions. Well-known examples of hardening by alloying are carat golds which contain silver and/or copper alloyed with the soft gold. Iridium/platinum is another good example. With increasing amounts of iridium the hardness and strength of platinum can be increased so markedly that the alloys become unworkable beyond about 30 per cent iridium.

(3) *Precipitation - Hardening.*—Precipitation - hardening is merely a controlled extension of the obstruction to slip discussed above. The phenomenon was first noticed by Wilm in 1911 in an alloy of aluminium with small percentages of copper. It was found that if these alloys were heated and quenched in water they were soft, but that after standing at room temperatures for a few days they had become much harder. It is for this reason that the phenomenon

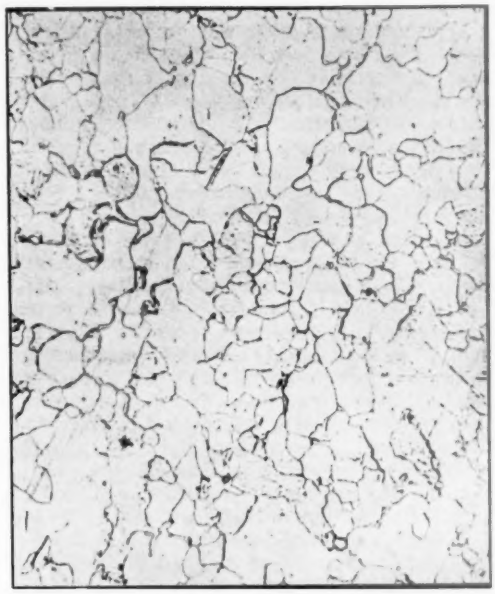


FIG. 4.—Microstructure of a pure metal, or solid solution alloy. × 150.

FIG. 5.—Microstructure of a two-phase alloy. × 150.

was first called " age-hardening." It has since been found that the process can be applied to

a large number of alloy compositions, most of which require to be heated more or less above room temperature for the hardening to take place. The phenomenon is always associated with a particular solubility relationship, namely, the alloying element is soluble in the basis metal to a significantly greater extent at elevated temperatures than at lower temperatures. On heating, the second element dissolves in the basis metal and is retained in super-saturated solution on rapid cooling. On reheating, or "ageing," the alloying element tends to come out of solution, forming aggregates of atoms which exert an extremely effective "keying action" on the lattice, and improve the resistance to slip to an extent which is often far larger than can be achieved by any other means. The process has, however, another very great advantage, in that the metal can be rendered relatively soft and workable by quenching, and can, in this condition, be bent, or otherwise manipulated to the required shape, before being hardened.

Because the actual heat-treatment process is similar to that employed with carbon steels, i.e. heating at a high temperature and quenching, followed by reheating at a lower temperature, the process has been called "temper-hardening," and the word "tempering" is still widely used in dental circles to describe the second, hardening heat-treatment. The analogy is, however, completely unsound : with steel, the quenching gives very great hardness with consequent brittleness, and the tempering (here the word is correctly used) is done to improve the ductility, even though this results in some slight loss of strength.

For each alloy there is a certain minimum temperature for the high temperature treatment : namely, the temperature above which all the second phase goes into solution in the lattice, and an optimum temperature and time for the second, hardening heat-treatment. If the optimum time or temperature is exceeded, the hardness becomes progressively lower again, and the alloy is said to be "over-aged." Fig. 6 shows a typical series of curves obtained by plotting hardness against temperature of heat-treatment for fixed times, of a gold-platinum alloy. The peaks of the curves move to lower temperatures as the time of heating is increased. Fig. 7 shows the effect of increasing time at fixed temperatures. Where accurate means of controlling the temperature are not available it may be sufficient to do the hardening over a

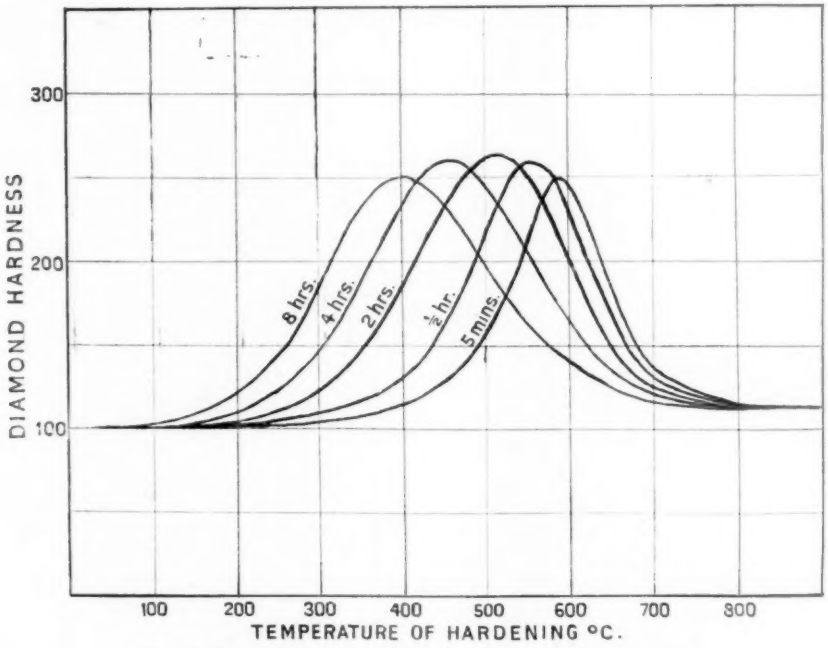


FIG. 6.—The relation between hardness and hardening temperature.

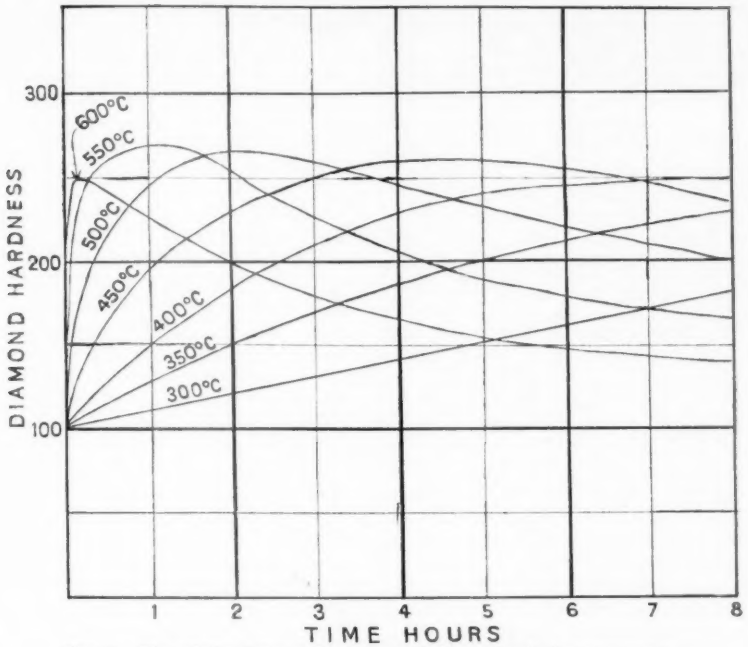


FIG. 7.—The relation between hardness and time at hardening temperature.

range of temperature, say by heating to a temperature at the top of the hardening range and allowing to cool slowly. This is the practice commonly employed in dental workshops, and it gives satisfactory results with good dental alloys, but the maximum properties are not generally achieved.

The changes in the microstructure on heat-treatment of alloys susceptible to precipitation-hardening are interesting. On quenching from a temperature above the solubility limit, the alloys show the single phase structure typical of a pure metal or solid solution alloy (fig. 4), and on hardening there is little visible change other than a slight fuzziness in the structure. The aggregates of atoms precipitated are too small to be revealed in this way, and even X-rays do not reveal the presence of a discrete second phase. After heating to higher temperatures, i.e. overageing, conglomerations of the second phase appear under the microscope as shown in fig. 8.

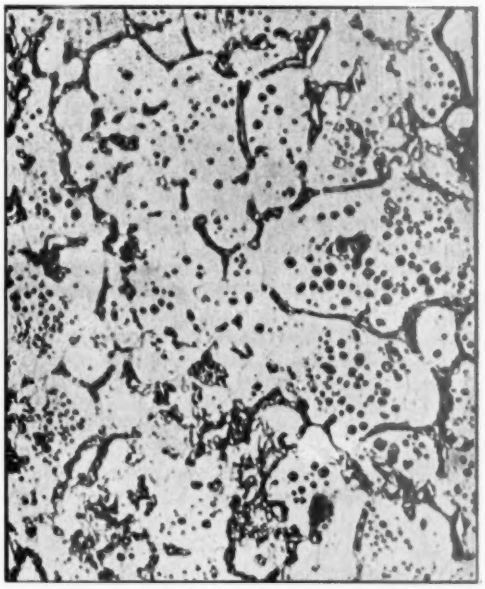


FIG. 8.—Microstructure of an over-aged precipitation-hardenable alloy.

APPLICATION TO DENTAL MATERIALS

Several alloys of precious metals show precipitation-hardening. They include the following binary alloys.

Solvent	*Solute*	*Hardenability*
Silver	Copper	fair
Silver	Platinum	slight
Gold	Copper	fair
Gold	Platinum	V. good
Platinum	Gold	V. good
Platinum	Silver	fair
Platinum	Copper	slight
Palladium	Copper	slight

There is, therefore, plenty of raw material for metallurgists to develop suitable precipitation-hardening precious metal alloys, and the use of non-hardenable alloys in dentistry is declining very rapidly. The ability to harden by heat-treatment is, however, only one of many properties required by the dentist who, by the nature of his work, is one of the most exacting of metal users. Among the properties required are the following :

(1) Unexceptional corrosion and tarnish resistance.
(2) Maximum strength with minimum weight.
(3) Adequate workability to permit of minor adjustments.
(4) Sufficient springiness to withstand severe strains without deformation in use.
(5) A non-critical hardening treatment.

In addition casting alloys require to have the following properties :

(6) Good castability and freedom from porosity in the casting.
(7) A constant shrinkage on cooling, to give dimensional accuracy.
(8) A low melting point to permit easy working.
(9) Absence of metals which are lost readily during melting, to permit re-use of scrap.

There is also in many quarters a decided preference for alloys having a rich gold colour, and this may not be easy to reconcile with the other requirements.

It is unlikely that an alloy exists which would get full marks on all counts, and it is the aim of alloy makers to get the best compromise. Some of the special alloys, now in use, contain as many as six elements.

Theoretical metallurgists and physicists are just beginning to make progress in predicting some of the properties of binary alloys—that is alloys of two metals only, on the basis of atomic radii and electron configuration, but for more complicated alloys, research and testing step by step is the only method at present available. Nevertheless a large amount of work has been done, and a great deal of empirical information is now available.

Gold-platinum Alloys.—Alloys of gold with platinum offer the most promising starting point since compositions in the middle of the series can be hardened to about 500, and show tensile strength equal to that of hardened alloy steels. These alloys form the basis of some of the best dental wires for clasps and orthodontic appliances. The binary alloys are not themselves satisfactory, however, since they are subject to severe grain growth on heating, and show poor ductility in the hardened state. A certain amount of platinum can with advantage be replaced by palladium and carefully worked out additions of other metals including silver, copper, and zinc, give alloys of high strength combined with the other desirable properties. That very careful control of these subsidiary alloying elements is called for, is indicated by the figures reported for two wires of basically similar composition. Their hardness values were 360 and 335 (DH/10) respectively, but whereas the first showed an elongation in the tensile test of 14·5 per cent, the second showed only 8·5 per cent.

Gold-copper Alloys.—The presence of large amounts of platinum in gold gives alloys of high melting point and poor casting properties, and hardenable casting golds are generally based on the gold-copper series. Here, too, the binary alloys are lacking in ductility in the hardened condition, and further, a high copper content reduces corrosion resistance and is prone to oxidise during melting. Silver reduces the hardenability, but additions of platinum metals improve the properties in almost all respects, particularly giving good ductility with good hardenability. The term " platinised " is not just a high-sounding fad. Platinum and palladium raise the melting point of the gold alloy, and also tend to increase the freezing range, so that indiscriminate additions of these metals may render the production of completely dense castings more difficult ; but by appropriate combination of the several alloying elements, good castability can be combined with the other desirable properties already indicated.

Palladium Base Alloys.—Palladium has always been attractive to workers in the dental field ; firstly because of its low specific gravity (12) compared with gold (19·3) and platinum (21·5), and secondly because it is relatively cheap. There is, however, nothing in the known properties of binary alloys of palladium to suggest great possibilities of making hardenable alloys. Alloys with gold, or silver, show no precipitation hardening, and copper-palladium alloys show only slight hardening. However, it was found that ternary alloys of palladium with silver and copper exhibit considerable capacity for harden-

ing, those in the centre of the field giving diamond hardness figures up to 450. Such alloys are, however, deficient in a number of respects, particularly in corrosion resistance, and the useful dental alloys contain gold and/or platinum in addition to the three basis metals palladium, silver, and copper. The casting alloys of this series have, naturally, higher melting points than the gold-base casting alloys, but when the appropriate technique has been mastered, excellent light-weight castings, which can be rendered very strong by heat-treatment, are obtainable.

The following table gives a summary of the relevant properties of a number of precious metals and alloys of interest in dentistry.

Material	*Sp. gravity*	*Diamond hardness*		*Tensile strength p.s.i.*		*Elongation % on 2 in.*	
		Annealed	*Heat-treated*	*Annealed*	*Heat-treated*	*Annealed*	*Heat-treated*
Gold	19·3	25	*	19,000	—	Very high	—
Platinum	21·5	40	*	21,000	—	40%	—
Palladium	12·0	40	*	28,000	—	40%	—
20% iridio-platinum	21·6	180	*	100,000	—	F. high	—
Platinised casting gold		150	225	68,000	120,000	20	4
Palladium base casting alloy ...		175	250	80,000	115,000	12·5	2
Platinum gold alloy wire... ...		220	350	115,000	180,000	20	12
Palladium alloy wire		180	265	90,000	150,000	21	5

*These materials are not susceptible to precipitation-hardening, but can be hardened somewhat by cold-working.

SHORT COMMUNICATIONS

A CASE OF MULTIPLE SUPERNUMERARY TEETH

By F. A. C. OEHLERS, L.D.S.Spore

From Dental Department, University of Malaya, Singapore

Case Report

The patient, a Malay male, 24 years of age, presented with acute pulpitis of the right mandibular permanent premolars resulting from caries. On examination, several supernumerary teeth were found to be present both in the maxilla and in the mandible (fig. 1) as follows :

Mandible

Incisor Region.—There was marked overcrowding and malocclusion due to two extra lateral incisors, one on each side, resembling in every respect the normal lateral incisors, so that it was impossible to differentiate one from the other.

Premolar Region.—On the right side, apart from the normal premolars which had deep interstitial cavities, an additional three teeth simulating mandibular premolars but smaller in size were present. Two were lingual and disto-lingual to $\overline{4}|$ respectively and the third had erupted disto-lingually to $\overline{5}|$.

On the left side no erupted supernumerary tooth was present but radiographs revealed two unerupted supernumerary teeth lying below the roots of the

Fig. 1.—Acrylic models of case (¾ size).

premolars (fig. 2). The more distally situated of the two, lying horizontally with its crown anteriorly, was caniniform in shape while the second supernumerary tooth, which appeared to resemble a premolar, was inclined in the opposite direction.

FIG. 2.—Radiograph of the left mandibular premolar region showing two unerupted supernumerary premolars.

$\overline{6}|\overline{6}$ were missing and had presumably been previously extracted.

Maxilla

Incisor Region.—A peg-shaped tooth was present lingual to and between $|\underline{23}$.

Premolar Regions.—On the left side a second peg-shaped tooth was present lingual to and between $|\underline{45}$. No other unerupted supernumerary tooth was present. A gold and acrylic bridge had been inserted over $|\underline{3}$ and the buried root of $|\underline{4}$.

On the right side a similar bridge was present and it was noticed that there was a slight bulge in the palate opposite the premolars. Radiographs showed this bulge to be due to the presence of three unerupted premolars (fig. 3) of which the most posteriorly situated was the largest.

FIG. 3.—Radiograph of the right maxilla showing the three unerupted supernumerary right maxillary premolars.

Molar Regions.—On each side was a diminutive molariform supernumerary tooth, commonly referred to as a paramolar of Bolk, buccal to and between the second and third molars.

The tubercles of Carabelli on the first molars were very prominent—not a common feature in patients of mongoloid racial stock.

With the exception of the mandibular incisors the teeth of the normal series in both jaws were not displaced and occlusion was normal.

DISCUSSION

The total dentition originally present in the jaws assuming $\overline{6}|\overline{6}$ to have been lost was therefore :

s s ss	s s s
8876554443 21	1223445 6788
876554443221	12234455678
s ss s	s s s

A total of fourteen supernumerary teeth was present. The majority of these bore some resemblance to the teeth of the normal series, while two were rudimentary peg-shaped teeth.

Several cases have been reported in which greater numbers of supernumerary teeth were present but an unusual feature of this case was the presence of three supernumerary premolars in the right mandible as well as in the right maxilla. Two supernumerary premolars were present in the left mandible and one in the left maxilla. Marré (1940) has reported a case of three supernumerary premolars in the left mandible and two in the right mandible.

It has been suggested, Osburn (1912) that supernumerary teeth represent the atavistic reappearance of teeth phylogenetically suppressed. Since the typical mammalian formula includes four premolars in each segment and no primate is known to have possessed more than this number, this theory cannot be sustained in the present case nor in that of Marré.

It would appear that these and others similar to them, are cases verging on compound composite odontomes, the supernumerary teeth being the result of aberrant though co-ordinated growth of the dental laminæ or dichotomy of tooth germs affecting several areas of the jaws.

REFERENCES

MARRÉ, J. M. (1940) *J. Amer. dent. Ass.*, **27**, 212.
OSBURN, R. C. (1912) Dent. Cosmos, **54**, 1,193.

Reference to this case has been made by Tratman, E. K. (1950), *Dent. Rec.*, **70**, 33.

CONGENITAL ABSENCE OF PERMANENT TEETH

By G. E. RAY, F.D.S. R.C.S.Eng.

An intelligent 11-year-old boy of normal physical development, with well-developed jaws, presented himself with the following dental formula:

$$\frac{6edcb1 \mid 1bcde6}{6edcba \mid a\ 3de6}$$

In view of the unusual number of deciduous teeth present radiographs were taken. These revealed the absence of the following members of the permanent dentition:

$$\frac{7\ 5432 \mid 234}{5\ 321 \mid 12\ 45}$$

Examination of hair and nails revealed no abnormality. He was the third of three children. The rest of the family showed no abnormality neither could either parent recall any familial aberration.

However, the mother, who is a farmer's wife, had a large house to run and had to look after the children, all of whom followed closely.

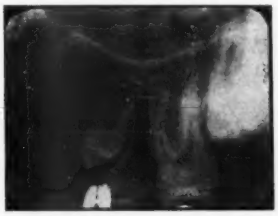
She stated that in fourteen years she bore four children and had three miscarriages. The boy followed closely on the second miscarriage and was a 7-month child.

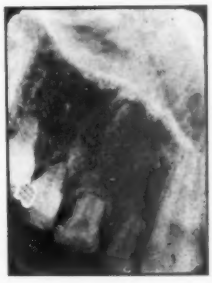
Of interest in this case is the degree of resorption which is proceeding normally in the following:

$\frac{edc \mid cde}{edc \mid\ de}$ of which $\frac{c \mid c}{c \mid\ d}$ are non-carious, have no restorations and no successors. Only the $\overline{b} \mid$ shows greatly retarded resorption, all the others showing progressive resorption. The $\mid \overline{b}$ was lost normally.

The deficiencies were confined to the permanent dentition. The third molar regions were not radiographed.

The evidence in this case points conclusively to factors other than pressure in the process of normal eruption.





EVERYDAY PROCEDURES IN DENTISTRY

GINGIVECTOMY BY SHORT WAVE ELECTROSURGERY[1]

By P. A. TROTTER, B.D.S.Birm., H.D.D.Edin., L.D.S.Eng.

King's College Hospital Dental School (University of London)

The use of electrosurgery or "surgical diathermy" is closely associated with the discoveries of d'Arsonval (1891), Tesla (1891), Nagelschmidt (1908) that high-frequency currents will penetrate body tissues causing a deep-seated heating of those tissues (diathermy). After the inception of diathermy in medicine Nagelschmidt demonstrated in this country in 1910 the use of high-frequency currents for surgery. Czerny (1910) and Wyeth (1924) drew attention to their use for cutting tissue (electrosection, acusection, or the "arc operation"). In oral surgery electrosection was introduced by Muller (1925). Investigations by Cumberbatch, Clark, Kelly, Ward, Sagirhan, Ogus and Bowdler Henry have led to the development of various techniques. Difficulties have been encountered, however, in producing and making available a unit providing a smooth fast-cutting arc suitable for work in the mouth. With this in mind it was decided to investigate the possibilities of devising a portable electronic machine with a monopolar electrode (fig. 1) which would be particularly suitable for periodontal surgery. With the aid of two colleagues at the University of Birmingham such a machine was made and given an extensive clinical trial. It has been used for gingivectomy, biopsies of malignant growths, excision of papillomata, fræna, etc., and root canal therapy, but for the present the description will be confined to gingivectomy by short-wave electrosurgery using the "cutting arc." This is not to be confused with bi-polar "electro-coagulation," a method which has been found to be clinically unsatisfactory.

[1]As demonstrated at the Annual Meeting of the British Dental Association at Birmingham, July 1950.

High-frequency ultra-short-wave currents of the correct type will excise tissue. These currents do not produce the undesirable mass heating of the tissue as in true diathermy, but they produce a film-like arc around the single electrode when that electrode is in contact with wet organic tissue. It is this arc, guided by the operator, which plays the part of a scalpel thereby severing the tissues. If the separated surfaces are examined they appear coagulated, the blood vessels have been sealed and hæmorrhage is controlled. The effect is confined to the surface of the cut area, the depth of destruction having been shown to be in the region of 1/10th of a millimetre. A deep change does not occur in the tissues as when an actual cautery is used.

Electrosurgery has numerous advantages for gingivectomy, but it is strongly emphasised that the operator must obtain experience of the technique before attempting an extensive operation. This may easily be accomplished by practice on a piece of moist raw meat.

The controls on the unit will determine the characteristics of the current from coagulation to

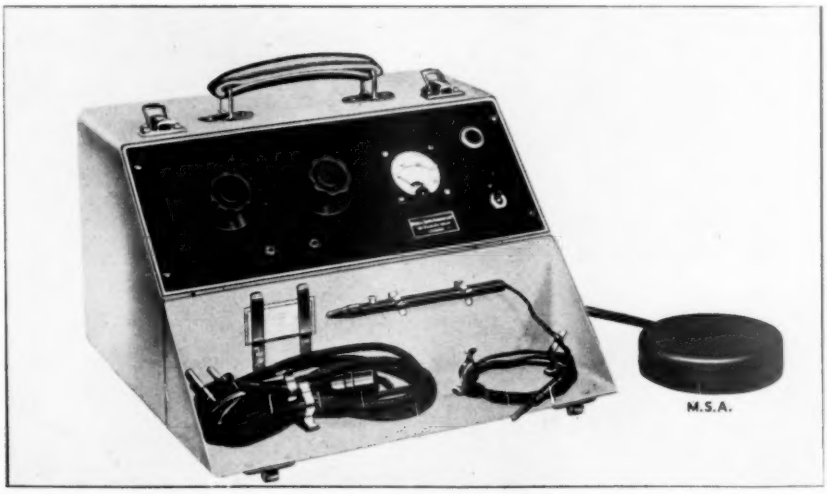


Fig. 1.—Short-wave electrosurgery unit

FIG. 2.—Before treatment.

FIG. 3.—After prophylaxis and prior to gingivectomy and gingivo-contouring with short-wave electro-surgery on $\overline{3}|3$ region. Anæsthesia —local infiltration. First injection. (Note long needle parallel to gingival margin.)

FIG. 4.—Anæsthesia — *cont'd.* Second injection. (Note needle inserted into field already anæsthetised and again parallel to gingival margin.)

FIG. 5.—Anæsthesia — *cont'd.* Third injection. Lingually to $|\overline{3}$. The fourth injection is made a similar way lingually to $\overline{3}|$.

FIG. 6.—Measuring pocket depth using right-angled needle. Inactive electrode needle inserted into pocket—depth noted.

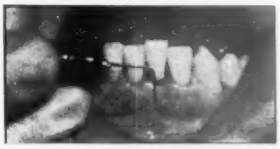


FIG. 7.—Inactive needle placed buccally to pocket to correspond with pocket depth.

FIG. 8.—Coagulation mark made on buccal gingiva by manipulating instantaneous foot switch of electrosurgery machine. (Similar marks made along $\overline{3}|3$ area buccally and lingually.)

FIG. 9.—Continuous incision with right-angled needle attached to short-wave electrosurgery unit. Incision made with selected arc. (Repeated on lingual aspect of the area.) Note lack of hæmorrhage.

FIG. 10.—Tissue being removed with "Ash 82 scaler." Note lack of hæmorrhage and continuous strip of gum tissue.

FIG. 11.—Labial tissue almost removed. Note lack of hæmorrhage and clean incision.

FIG. 12.—Tissue removed buccally and lingually. Arc electrode used for contouring and producing interproximal sluice ways. $\overline{1}|3$ completed.

FIG. 13.—Contouring completed. Area ready for the application of packs. Note lack of hæmorrhage.

FIG. 14.—Packs in situ.

FIG. 15.—Packs removed (seven days after operation).

FIG. 16.—The area one week later.

arc formations of varying intensity. The speed at which the electrode is moved through the tissue is important; too rapid a movement will cause quenching of the arc ; if the electrode is moved too slowly unnecessary destruction of tissue will occur. Experience shows that the control of the current intensity

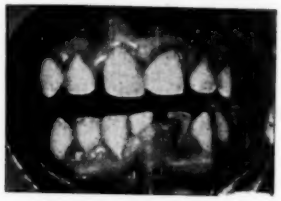


FIG. 17.—Another case before gingivectomy.

to meet the tissue resistance, the speed of movement of the electrode and manual dexterity determine the success of the operation.

TECHNIQUE

The successive steps in the operation are set out pictorially in figs. 2–16.

FIG. 18.—Case shown in fig. 17. After gingivectomy by short-wave electrosurgery.

ADVANTAGES OF ELECTROSURGERY OPERATION

The universal monopolar electrode—no indifferent electrode is required—replaces the various knives which require sharpening. A sterile incision is made which eliminates spreading the infection. As the needle coagulates as it cuts, hæmorrhage is reduced to a minimum, as is the time of operation and packing. Less local anæsthetic solution is, therefore, needed. This control of hæmorrhage enables gingivectomy by electrosurgery to be performed under general anæsthesia, excluding inflammable anæsthetics, without the use of local vasoconstrictors. The tissue injury being slight and little sloughing occurring, an accurate forecast of the extent of tissue removed and the ultimate gingival contour is easy. Healing is rapid and uneventful. An interesting point made by patients who have had gingivectomy performed by scalpel and electrosurgery is that the local sensation of instrumentation is absent when the latter method is used.

Advantages over the actual cautery are that the electrode is cold, thus the patient is not conscious of a hot instrument being placed in his mouth, cell damage is not so extensive, and fine incisions may be made.

NOTES

(1) The electrode needle is a smooth nerve canal broach, shortened and bent at right angles.

(2) In inaccessible regions the soft tissues of the patient's mouth should be protected with a non-inflammable plastic or wooden spatula used as a tongue and cheek retractor.

(3) If the patient dislikes the odour of burning tissue it is simple to plug each nostril with cotton-wool. Some patients may object to the plugging, if they do the nose-piece of the N_2O and oxygen anæsthetic apparatus may be used instead.

(4) The absence of hæmorrhage (vasoconstriction not necessary), and the shorter duration of the operation render possible a considerable reduction in the anæsthetic used.

(5) Whilst post-operative packing is not always necessary it is advisable to pack and thus ensure the patient's comfort.

(6) Contouring of the gingivæ is facilitated, the electrode being used in a similar fashion to a hot knife on wax. In some cases, as after an acute attack of fuso-spirochætal gingivitis, all that is required is a contouring of the gingivæ as it is not always necessary to remove a continuous strip of the gum tissue.

(7) Pre- and post-operative treatment is the same as that described in the previous article using a scalpel (1951) *Brit. dent. J.*, **90**, 18.

SUMMARY

A pictorial account of the operation of gingivectomy by scalpel and short-wave electrosurgery has been presented with additional short notes on the technique. The advantages of short-wave electrosurgery are given, based on the treatment of over 200 cases by this method.

ACKNOWLEDGMENTS

I would like to thank I. Spark and P. Newman for their hard work, ingenuity and co-operation in designing the prototype to my clinical requirements, also the Medical Supply Association for their kindness and co-operation in completing modifications and producing the present model, and W. Smith of the Photographic Department, King's College Hospital, for the many photographs in this and the previous article.

Practical Note

NOTES ON CONSERVATIVE QUICK SETTING ACRYLICS

The Copper Collar Pressure Matrix

By ROBERT CUTLER, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.

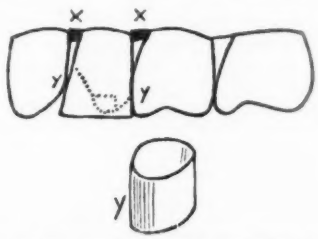
In a previous communication [1], reference was made to work already undertaken in the conservative application of the new quick-setting acrylic ("Dentafil"), and more recently an excellent article by McLean has afforded much useful information on this subject [2], the progress made following quite logically on the undoubted success of a similar material dispensed for prosthetic use ("Pentocryl"). Increasing experience makes perusal of current and earlier articles of a purely practical nature in certain American journals all the more interesting [3, 4, 5, 6] and the following notes may give further aid to those who have not yet used the material, so that needless difficulties and disappointments may thereby be avoided. At first blush the material would appear to encroach on the field of the silicates, this in a measure is largely true, a safe guiding rule being the larger the restoration required the more likely is quick setting acrylic to be superior; none the less, indiscriminate use is to be deprecated and confusion must not be allowed to arise between the apparent similarity of methods of application. For many types of cavity, silicate remains an adequate and tolerably satisfactory restoration if care is taken in using the material and allowance made for proper setting in a dry field; for acrylic it *must* be clearly understood that no less care is essential, a greater deftness in handling the material is desirable, a longer hardening or "setting" time must be allowed for, and strict provision must be made for controlled maximal pressure during the hardening period. With these requirements satisfied a new and intriguing field lies in front of the operator, quite apart from the diverse scope of other applications, such as the fixing of porcelain or preformed acrylic crowns and inlays with a cement-like mix of monomer and one of the superfine mesh powders.

In general it can be said that the experienced acrylic worker has a long start in this field, not only because a long period of trial and error practice guards the operator against indiscreet use of the material, but also because long familiarity with it in the manipulative stages facilitates a quicker mastery of what is, in essence, a much more highly activated preparation. For example, a well-concentrated mix is known to be essential for attainment of true shade guide colour values, and although a like degree of concentration and deliberate manipulation in the "dough" stage is hardly possible with the new material it must remain a principle not to be lightly disregarded, hence the need for an early attainment of a deft and rapid mixing technique. Correct manipulation of the material on the slab is, as yet, a matter of opinion and personal preference, but the need for a cold or cooled slab is mandatory and the ideal should be a sufficiently thick, and, above all, homogeneous, mix capable of actual insertion and preliminary consolidation before a "late dough" or rubbery consistency is reached.

There is furthermore some difference of opinion as to the value of protective liners and whereas some workers use none, McLean suggests pulpal irritation may, and does, result from the presence of the monomer. There is likewise difference of opinion as to whether liners aid retention or the reverse, certainly the routine application of a liner with poor shelf life, resulting in a differing consistency of the material from week to week, may prove a definite hindrance in this respect. Investigation into the use of an opacified, almost paintable, liner of a fully liquid consistency is now in being, but in any case retention should be secured by the mechanical character of the tooth preparation, i.e. planning of undercuts, etc., and in no wise should rely on a liner in the sense that a cement is so employed with other forms of restoration.

Copper Collar Pressure Matrix

To facilitate the general procedure in respect of pressure control various forms of pressure matrix and clamps have been elaborated, but these have not, as yet, been standardised, nor is any one model wholly satisfactory or universally applicable. In such circumstances a technique is detailed using standard copper collars, this being a logical development of their employment for direct wax form preparation described by the author [7]. The technique described virtually guarantees a wholly satisfactory restoration, and if not universally applicable in the form described, forms a useful



Copper collar pressure matrix arranged for direct acrylic restoration of mesial aspect of a first premolar. Note tight wedging of collar interstitially at or below cervical margin of preparation x——x. Note thinning of copper collar by discing or light grinding on the interstitial faces y——y. Note collar length approximates to height of cusps of tooth to be restored.

criterion whereby the efficiency of other methods can be safely judged.

One of the most promising and satisfactory applications of the new material is for the restoration of a large mesio-occlusal cavity with buccal wall breakdown in an upper first premolar, and as this is ideally suited for the collar matrix technique the use of the latter can be described in detail. Preparation of the cavity need not be considered, except in so far as successful planning and execution of a broad dovetail lock and maximal general undercut is regarded as essential, the pulpal area being protected with cement in the usual way. A standard clean copper collar (the wall thickness of which is usually about 0·009 in.) is then selected that accurately fits the tooth, expansion of a slightly undersized band being helpful if the next larger stock size is too slack, this is festooned in the usual way, the depth of band being adjusted to a height slightly above that of the cusps. The front and back aspects of the fitted band, i.e. the faces passing through the contact points are marked with a sharp probe whilst the band is *in situ*, the latter is then removed and the areas thinned with a sandpaper disc, a reduction to a thickness of 0·004 in. or less being quite practicable. The interior of the cleaned band is then painted with cellulose acetate in acetone, a stock solution of thin consistency being kept available for this purpose. The solvent evaporates rapidly leaving a thin cellulose acetate film, which not only acts as a separator, but also prevents any possibility of chemical staining of the acrylic from the metal, as in certain circumstances copper is said to be active in this respect. Stainless steel, tin, and aluminium matrix materials are claimed to be inert, but the acetate film remains invaluable as a stripping medium, greatly facilitating removal of the band after hardening. The band is replaced in position, the thinned sharp contact faces making precise insertion easy, and is tightly wedged at the cervical margin with wooden wedges, front and back, wedges made by razor-blade trimming of a matchstick being quite suitable, though for narrow spaces a standard hard wood pick will serve very well. Firm wedging to the point of discomfort to the patient is essential, as this aids a general tooth separation so desirable for the later integrity of the filling contact points: the wedges must be placed low down, beneath, or at, the level of the interstitial cervical margin of the preparation, the thinned band being " belled out " or contoured as requisite. The operative field is packed and dried, and the toilet of the cavity completed, all materials and instruments being ready to hand. A mix is prepared, slightly on the thin side, and one-half immediately transferred in one lump to the cavity, into which it is firmly spatulated, the second half of the mix being further spatulated on the slab by the assistant who thickens the mix by adding powder if the consistency of the mass allows adequate incorporation. The original mass having been firmly tamped down by the operator, the second half is transferred to the cavity in one lump, then covered by a wisp of cellophane and guiding pressure exercised upon it by the finger; at first maximal pressure is not applied but as soon as the lump beneath the finger is felt to be rubbery and slightly resistant the heaviest possible finger pressure is applied and maintained until it is felt that the mass has hardened beyond a point when continued pressure exercises any effect. Warm air is then played on the surface of the band for one minute after which it is left for ten minutes, or until the excess is found to be bone hard; any disturbance prior to this point will have a disastrous effect on the finished restoration similar to that occasioned by disturbing a silicate restoration at the point of gel. When truly hard a flat-bladed plastic instrument or small Warwick James elevator is driven down the side of the band when the latter will usually split spontaneously on either of its thinned faces, after which it can be withdrawn sideways, but if this spontaneous splitting does not occur, the band will have to be cut through at any convenient tooth surface point with a No. 0 fissure bur. On removal of the collar segments the mesial and cervical aspects of the restoration should present a virtually finished and glossy appearance, any slight cervical apron being sought for, and, if present, carefully trimmed. The removal of the bulk occlusal excess is the final and easiest step, using instruments and methods excellently described by McLean and others.

For a mesial or distal corner, or gross breakdown of an incisor, the thinned collar method can also be usefully employed, careful cervical fitting and wedging being carried out as before, the band being left in its original cylindrical shape at this stage to allow good access from front or back. The material is fed in as previously described, and gentle finger pressure over cellophane applied as before, but as soon as resistance is felt to the finger of (say) the left hand, anterior and posterior pressure is applied by finger and thumb of the opposite hand squeezing the collar to the tooth sectional contour, full downward pressure by the finger of the left hand on the excess mass being maintained throughout. After hardening, the band is split as described, when the mesial and distal aspects will present themselves in a virtually finished form, any gross anterior or posterior excess being easily accessible for speedy and safe removal.

In the molar region, this form of thinned tightly wedged collar is equally useful, though the collar should be cut down well clear of the bite, a tin-lined compo biting block, as described by many writers, being used for follow-up pressure, normally supplied by the finger in the more accessible parts of the

mouth. It would be difficult to conceive any method giving more convenient controlled pressure with such absence of the usually troublesome gross cervical apron of excess material, but further study of design of automatic, or mechanical, pressure clamps may well yield promising results and give ample scope for inventive ingenuity. So far the author has had nearly two and a half years' experience of restorations completed in the manner described and their general stability, and the integrity of the contact points, augur well for a satisfactory life; both material and technique need therefore hardly be considered experimental any longer, so that time can profitably be spent on a critical evaluation of the clinical results now accumulating, which must, and which seem likely to, stand comparison with those obtained by use of other materials the dental surgeon has for so long employed.

BIBLIOGRAPHY

[1] CUTLER, R. (1950) *Brit. dent. J.*, **88**, 184.
[2] McLEAN, J. (1950) *Brit. dent. J.*, **89**, 215.
[3] MALSON, T. S. (1950) *Dent. Dig.*, **56**, 58.
[4] MEYER, H. I. (1950) *Dent. Dig.*, **56**, 124.
[5] —— (1950) *Dent. Dig.*, **56**, 394.
[6] SALISBURY, G. B. (1950) *Dent. Dig.*, **56**, 202.
[7] CUTLER, R. (1943) *Brit. dent. J.*, **74**, 85.

DEMONSTRATION AT ANNUAL MEETING

A NEW STEREOPTIC VISUAL AID FOR TEACHING ORAL HYGIENE

BY H. COLIN DAVIS, L.D.S. R.C.S.ENG.

THIS demonstration consisted of a series of pictures prepared by a new process which has been perfected by Stereoptics Limited, London, for reproducing colour photographs which are fully three-dimensional, but which can be viewed in any light without the need for special glasses.

A series of eight such pictures have been prepared for the Oral Hygiene Department of D. & W. Gibbs, showing a generally acceptable method of teaching the correct use of the tooth-brush. The pictures are mounted in pairs in four illuminated frames with appropriate instructions under each picture. As the sets are completed they are being presented to the teaching schools in this country, for use in their departments of preventive dentistry.

Orthodontic Notes

Orthodontic Therapy

BRODIE found that incremental growth of the various components of the face follows parallel spatial planes. The plane of the palate, that of occlusion, and the base of the body of the mandible maintain a spatial parallelism as the facial bones and jaws increase in size. The gonial angle of the mandible does not change but the angle described by the condyle with the base of the body of the mandible is subject to functional metabolic and other changes, as shown by Engel and Brodie who stated that the epiphysial-like growth at the condyle persists until the twentieth year and provides the forward and downward direction in mandibular growth and contributes to increased width of the jaws. Orthodontic forces applied to the teeth, acting through the periodontal membrane on the surrounding alveolar bone, modify bone arrangement by changing the contour of the alveolar process ; they do not change the over-all morphology of the respective bodies of the maxilla and mandible themselves.—SALZMANN, J. A. (1948) *Amer. J. Orthodont*, **34**, 297.

The Use of Isothermal Plastics in Orthodontics

SELF-CURING plastics may be used for orthodontic appliances such as retainers, bite plates, bite-raising appliances, and mouth shields. The technique is simple and time saving; in most cases the model remains intact so that a new impression is unnecessary if there is loss or breakage. The steps in technique include painting with water-glass the area with which the acrylic will be in contact. When the water-glass is dry, in about 10 minutes, the mixture of powder and liquid is prepared with a cement spatula. This is only done long enough to wet the powder thoroughly because it must be quite plastic for the next step. It is immediately adapted to those areas of the model where the wire will be incorporated. The wire must be prepared so that there is plastic between it and the model where the wire is to be covered by the acrylic. Holding the wire with the left hand, the rest of the acrylic is added to the palatal area of the model, completely covering the wires. The material is then shaped to the gingival and palatal areas with the fingers and thumb of the right hand; excess is trimmed away with a knife. The model is put aside for at least forty-five minutes and then the retainer polished with pumice. If a bite plane is to be added it is done after the wire has been incorporated. A piece of excess acrylic is shaped for the plane, then the surface of the plane and the area of the retainer which are to be in contact are painted with the acrylic monomer and the plane put in position.—TOEPPER, A. K. (1950) *Amer. J. Orthodont.*, **36**, 305.

The Expansion Bar Appliance

SVED describes a method of upper expansion whereby the first molars and premolars are banded and joined by a lingual bar. The bars of each side converge towards the front. Tubes are placed on the two bars and joined by a cross piece. Hooks for elastics are placed towards the distal end of the tubes and on the front of the bars. Elastic bands pull the hooks towards one another, moving the tubes medially along the bars, this increases the separation between them (the bars) and consequently increases the separation between the teeth of the two sides, thus bringing about expansion or widening of the arch. If the teeth on only one side have to be moved, the cross piece is soldered rigidly to the lingual bar on the side not to be moved. Additional anchorage to keep one side fixed is obtained by banding the lateral or canine on the opposite side and uniting this to the side to be fixed by means of a lingual wire.—SVED, A. (1947) *Amer. J. Orthodont.*, **33**, 22.

BRITISH DENTAL JOURNAL

APRIL 17, 1951

THE BUDGET AND THE ESTIMATES

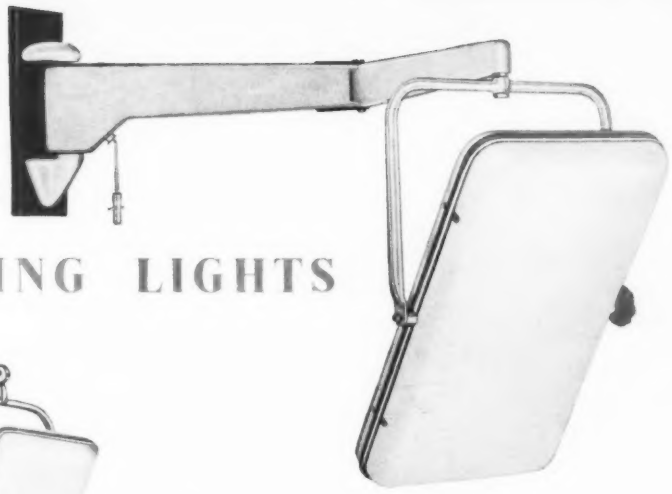
THE Civil Service Estimates for the year ending March 31, 1952[1] show that the General Dental Service is expected to cost £39,890,000 as against £46,915,000 for the year 1950–51. This reduction of approximately 15 per cent represents the saving which is expected to accrue to the Exchequer during the year as a result of the imposition of the charge for dentures. Confronted with the need to reduce the cost of the Health Service, the Chancellor of the Exchequer has chosen the obvious method of imposing a charge for dentures and spectacles. Unless, however, the charge acts so as to reduce the demand for dentures, it will not effect any real reduction in the cost, but will merely alter the incidence of that part of it which will be paid directly by the individual patient, rather than indirectly by the whole body of taxpayers. The experience of dental benefit under the National Health Insurance Acts, however, suggests that in a percentage of cases, the imposition of the charge will lead some patients to refrain from applying for necessary dental treatment. On the other hand, the importance of this factor will be considerably reduced in the existing condition of full employment, and the charge will create real hardship only for those classes, such as old age pensioners, who are living on small fixed incomes. Detailed comment on the possible repercussions of the charge on the profession must await the introduction of the legislation or regulations necessary to bring the charge into operation and details are available with regard to the method by which it is to be levied. It can, however, be said, at once, that the profession will agree that, if the state of the national finances renders it imperative that the cost of the dental service should be reduced, this is the right item on which to economise. The profession will not, however, be prepared to accept a return to the old dental benefit conditions under which the fee to be charged was fixed, and the dentist left to collect part of the fee from his patient and so to run the risk of incurring a percentage of bad debts—a perverted form of grant-in-aid.

[1] His Majesty's Stationery Office, 4s. net.

A curious feature of the estimates, is the difference between the percentage reductions in the three parts of the Kingdom, for whereas the overall reduction is 15 per cent of the 1950–51 estimate, that for England is 14·3 per cent, and those estimated for Scotland and Wales are, respectively, 23·3 per cent and 6·8 per cent. It would seem that, measured in terms of gross cost, the demand rate in Scotland has, hitherto, been fractionally higher than that in England and Wales. Whether this is a reflection of a difference in the incidence of dental disease in the two countries, or is due to other factors, is a matter on which it is impossible to be dogmatic. It is, however, interesting to recall that in the early days of dental benefit under the old National Health Insurance Acts, there was an even greater discrepancy between the demand rates in the two countries, both in terms of number and cost of claims for benefit. The new Estimates suggest that the percentage incidence of dentures has been appreciably higher in Scotland than in other parts of the Kingdom and that, because of this difference, the new charge will effect a greater saving in Scotland than elsewhere.

In view of the desirability of references to regional dental officers being cleared with the least possible delay, it is somewhat disquieting to find that, in the Estimates for the Ministry of Health, provision is made for a staff of only 18 regional officers as compared with that made in 1950–51 for 25 such officers—these being in each case additional to the headquarters staff of the Principal Dental Officer, the Senior Dental Officer and two Deputy Senior Dental Officers. The fact that the Estimates make provision for an increase of £1,000 in the fees paid to part-time dental referees, suggests that this reduction has been brought about by the difficulty of obtaining recruits to the Service of the right stamp, and who have adequate experience to fit them for these responsible positions, rather than as a result of any deliberate intention to reduce the establishment. If, indeed, that is the case, the cause of the shortage of recruits is fairly obvious

THE *ALLEN* DENTAL OPERATING LIGHTS



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—being the same, in a lesser degree, as that which has led to the diminution in the number of dental officers in the employment of local authorities. An analysis of the figures given in the Estimates, shows the average pay of regional dental officers to be £1,252 per annum in England, £1,175 in Scotland and £1,116 in Wales—figures which, in present circumstances, can hardly be expected to be attractive to men with any number of years of experience in practice.

It is probable, too, that the same cause is operating to keep the establishment of the Dental Estimates Board below full strength, for, although details of the remuneration of the professional members of the Board are not given separately, it is clear from the total figure, that it is not expected that there will be any appreciable expansion in the numbers of dentists in the employment of the Board. An overburdened staff is always likely to be less efficient than is an adequate one. The smooth working of the General Dental Service depends in so great a measure on the thoroughness and expedition with which the Estimates Board and the regional dental officer service discharge their several functions, that it is cheeseparing of the most uneconomical kind to handicap these services by paying the dentists engaged in them salaries which are not commensurate with the duties they are called upon to discharge and the responsibilities they carry.

NOTES AND COMMENTS

Dental Board Elections, 1951

ELECTIONS of members of the Dental Board to take office on July 28, 1951, will be held shortly. Official notice of election appears in the advertisement columns in this issue of the Journal and nominations of candidates must be received by noon on May 16. The members to be elected are two to represent "qualified" dentists practising in England or Wales, one each to represent "qualified" dentists practising in Scotland and Ireland, and two to represent dentists entered on the Dentists Register as "Dentists Act 1921." Nomination papers and other particulars may be obtained from the Returning Officer, Dental Board of the United Kingdom, 44 Hallam Street, London, W.1. The present elected members of the Board are F. J. Ballard, A. H. Condry, J. Lyons, D. MacGregor, H. T. Roper-Hall, and R. G. Heegaard Warner. It is understood that Mr. Warner is retiring for reasons of health and that Mr. Roper-Hall will not be a candidate for re-election. The election address of all the candidates will, it is hoped, be published in the Journal some time before the ballot papers are issued.

Dental Board Accounts

THE accounts of the Dental Board of the United Kingdom for 1950 show that, despite the unavoidable increases in many items of expenditure, there was a surplus on the year's working of £2,585, as against £1,392 for the year 1949. The cost of the visitation of the examinations of licensing bodies during the year was £1,121, this added to the figures for the previous years brings the total cost of this essential work up to £2,084. It is interesting to note that out of the total number of dentists on the register (some 15,000), less than 2,000 did not pay a retention fee in 1950. It may safely be assumed that a not inconsiderable number of those included in this latter figure are no longer in practice. At the beginning of last year there were still 20 dentists who were registered as being in practice in 1878.

Progress in India

THE Annual Report of the All India Dental Association, presented to the Sixth All India Dental Conference, held at Bangalore in February of this year, shows that the young association is steadily consolidating its position. There are now no less than 37 branches of the Association, 4 new ones having been formed in the year under review. Registration of practitioners under the terms of the Dentists Act of 1948 is now approaching completion and the work of building up of the numbers of the profession and extending its usefulness is now well under way. How great is the task with which our colleagues in India are faced may be judged from the statement made at the Conference by Dr. W. S. Mathias that India had little more than 5 per cent of the dentists needed to provide a satisfactory level of service. Dr. M. K. Patel, in the course of his inaugural address as the new President of the Association, made a plea for the inauguration of "a sort of vocational dental training" in order to make possible the immediate supply of an intelligent class of practitioners—the university pattern continuing to be the ultimate goal for the uniform dental education of the future. This problem of dental education in India has to be viewed against the background of the needs of the population for dental treatment and the prohibition of practice by unregistered persons enacted in the Dentists Act 1948.

Doctors and Dental Hæmorrhage

THE inability of a doctor in the Health Service to recover a fee in cases in which he is called in to treat hæmorrhage following tooth extraction has for long been a matter for complaint with members of the medical profession. The treatment of such cases is primarily the responsibility of the dentist. Occasions will, however, occur when a doctor is called upon to treat such cases because the dentist is not available. It has been held that the giving of any such treatment falls within the doctor's terms of service and is covered by the capitation rate. This position is obviously anomalous since the dentist who is primarily responsible can be paid a fee for such cases whilst a doctor, who is in effect acting as his deputy, cannot make any charge. A proposal is now under consideration that the dentist should be required to attend such cases personally, or to make arrangements for their treatment in his absence. If this proposal is adopted the doctor would be empowered to receive a fee from the dentist and the latter would be able to claim the fee from the executive council in the same way as if he had attended the case personally.

Durham County Council

THE action taken by the Ministry of Education to direct the Durham County Council " to refrain from taking any steps to ascertain whether applicants for teaching posts at the disposal of the authority, are, or intend to become, members of a trade union or a professional organisation " will, it is hoped, be effective so far as the application of the " closed shop " principle to the professions is concerned. The National Union of Teachers are to be congratulated on the result of their determined stand for the principle involved. The incident was a curious reversal of procedure since it was the employer and not the employees or their Trade Union who was attempting to enforce a " closed shop."

Fifty Years Ago

From the " Journal of the British Dental Association," April 15, 1901.

About this time he wrote a small book on Dental Hygiene, and in 1840, as a result of the abuses of the Factory Act in the matter of the falsification of the register of age, Sir Edwin investigated the date of the eruption of the various teeth, and for this purpose visited most of the public schools around London. He published the results under the title of the " Teeth a Test of Age," and this became adopted by the Inspectors of Factories, and led to the detection of an immense amount of fraud.

From an obituary of Sir Edwin Saunders, F.R.C.S.

LETTERS TO THE EDITOR

PROBES

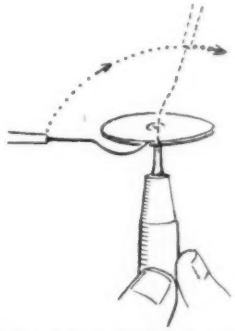
SIR,—The interesting Communication of Messrs. Miller and Atkinson under the title of " A Replaceable Probe Point " directs much-deserved attention to an important question, but I do regret the decision of the authors in favour of a renewable point rather than the proper restoration of the original one. I regret it because it seems to me to be a retrograde step in addition to other disadvantages.

Is there any other calling employing fine tools where there can be found such a woeful lack of skill—and even of interest—in maintaining them in perfect condition, as exists in dentistry? In my schooldays lessons in woodwork began not just with instruction in the use and handling of tools but with careful tuition in sharpening and caring for them. It is of the very essence of the true craftsman to be scrupulously particular in this respect.

How different was my professional initiation at hospital! The only indication I received as a dental student that the sharpening of instruments had even been considered was the inclusion of an oilstone in the required kit. Doubtless professional teaching has improved somewhat since that time, yet not long ago an instructional film on scaling produced by an important school demonstrated a sharpening procedure that the veriest schoolboy could have improved upon. Perhaps it is even sadder to hear one of our eminent oral surgeons condemn the use of surgical chisels because they require constant resharpening. Yet even this appears to evoke but little reaction in a profession where a truthful census would probably reveal that only a minority has *ever* honed the edge of an elevator.

As a preferable alternative to replaceable probe points may I offer a simple method of restoring their points to perfect condition:

Two cuttlefish discs are mounted together on a mandrel with their abrasive sides in contact.



While the mandrel is revolved at moderate speed in the straight handpiece the end of the probe is held lightly between the discs and the handle is turned slowly round once or twice through about 180 degrees. A watch-

maker's glass held in the eye enables the point to be inspected while it is reformed.

A number of probes can be dealt with in a few minutes and after but little practice it is easy to produce consistent, nicely tapered circular points devoid of flats, quite as good as new. Discs of $\frac{5}{8}$ or $\frac{3}{4}$ or an inch in diameter should be used according to the type of taper favoured.

The flexibility of the discs allows sufficient latitude to compensate for failure within reason to maintain the point in the natural plane of the discs during rotation of the handle. The initial condition of the probes determines the most suitable choice of grit, but it is worth using fine cuttlefish to produce a first-class finish.

Despite the importance of a satisfactory probe point in the clinical detection of caries I regard this as secondary to an even more important requirement, namely, an adequately magnified image of the tooth surfaces as they are being examined; and this is not obtainable with any mouth mirror alone. For some time I have been using optical magnifying lenses clipped to mouth mirror handles which can be adjusted to reflect the surface under examination if this cannot be viewed direct. Not only does this procedure lift the detection of carious lesions into an altogether new plane, but it does the same for all conservative work, revealing unsuspected weaknesses and faults likely to shock some of the most conscientious of operators.

411, *Finchley Road*, *London, N.W.3.*

Yours faithfully,
F. FRASER.

CARIES DETECTION

SIR,—I am amazed at the emphasis placed by Miller and Atkinson (*B.D.J.*, **90**, 157) and indeed, by nearly all the profession on that misused instrument, the dental probe.

So far as interstitial caries is concerned, it is possible for this to reach the pulp and yet not be detectable with a probe. On the other hand the sharpest of probes will wedge interstitially, and in the deeper pits and fissures whether they are carious or not.

All genuine cavities which will admit a fine probe, and nearly all others, can be detected by careful examination of the dried clean tooth by direct light (preferably a headlight) and then by transillumination. Bite-wing radiographs will render the remainder visible.

Absolute dryness and good lighting are the essential points in diagnosis, and probing is a superfluous, painful and misleading adjunct.

Yours faithfully,

12, *Manchester Square*, *W.1.*

PETER J. HILL.

SECTIONAL IMPRESSIONS IN ANTERIOR RESTORATIONS

SIR,—In view of the recent correspondence by Mr. L. J. H. M. Sickling and Mr. R. P. Graham I would point out that in my article of January 2 I stated that the device in question was " simply a modification of a basic type of impression retainer." I intended no claim to originality. Mr. Sickling and Mr. Graham's variations were unknown to me. The only type I had previously seen was of a different design and of American manufacture, and was unstable and inadequate. The intention was to construct a simple and stable form which could be made in a practitioner's own laboratory, as I hardly imagined sufficient interest would have been stimulated to encourage commercial manufacture in this country.

The basic idea of the sectional impression tray has for some long time been known to the profession and I accepted that its origin lay in antiquity. Not making any claim for originality I did not consider the matter of sufficient importance to pursue further. Nor, as Mr. Graham suggests, did I seek to infer that the origin of the basic idea was to be found in Guy's Hospital Dental School. If credit were due to Guy's, even in so small a matter, I should not have been content with inference, but would have given a full acknowledgment of the fact.

Yours faithfully,

University of Bristol, Dental School.

H. S. M. CRABB.

OPERATING STOOLS

SIR,—With all due respect to Mr. Payne's views on the Murray stool, (which apparently he has not seen) as compared with the Canadian type stool, the fact remains they are fundamentally different.

The Murray stool is a " high stool " with the operator working at standing height, the position of the patient in the chair can be adjusted to whatever position one wishes, and, what is most important, all equipment is within easy reach. Whereas the other types in existence are, to the best of my knowledge, all " low seats," and using a low seat necessitates tipping the patient back.

I have used a Murray stool for six months and find it most satisfactory. The lower type I found impractical with the normal unit position.

Brook House, *South Street*, *Midhurst.*

Yours faithfully,
F. J. SUMMERS.

RE-USE OF LOCAL ANÆSTHETIC CARTRIDGES

SIR,—Hitherto it has been my habit to discard all partly used cartridges. I am informed, however, that it is customary for many practitioners to give an injection to a patient with a cartridge which has been previously used for another patient.

Until recently the only advantage of this procedure was to save part of the cost of the cartridge. Now, however, that cartridges of one material—Zylotox—are in extremely short supply re-use of a cartridge for a second patient would materially assist in conserving supplies. This step can only be justified if it is free from danger to the patient and I am apprehensive of the risk of cross-infection from one patient to another.

I am aware that the manufacturers include certain antiseptic—and irritant—materials in their anæsthetic fluids and some syringes have a device which is intended, but fails, to prevent " suck-back."

In these circumstances perhaps you will be good enough to extend the facilities of your correspondence columns to other practitioners so that their views may be known.

Yours faithfully,

23, *Kingsley Avenue*, *Banstead, Surrey.*

KEITH D. W. FRASER.

Reviews and Abstracts

CLEFT PALATE AND SPEECH. Second Edition. By Muriel E. Morley, B.Sc., F.C.S.T., Speech Therapist Royal Victoria Infirmary, Newcastle General Hospital and Hospital for Sick Children, Newcastle-on-Tyne. Edinburgh : E. & S. Livingstone Ltd., 1951. Pp. 160. Price 12s. 6d.

When the first edition of Miss Morley's admirable book appeared in 1945, it was at once obvious that here for the first time in one short treatise was presented a review of cleft lip and palate in virtually all its aspects. The author professedly set out merely to provide a short manual for students of speech therapy, but succeeded in writing a volume with a wealth of information of interest and value to all concerned with this difficult problem, be he surgeon, speech therapist or orthodontist. The work is the result not only of wide practical experience and familiarity with modern trends in treatment, but also of a study of the history and previous literature on the subject.

After a brief description of the relevant embryology, there follows a chapter on the anatomy and physiology of the palate and the mechanism of oronasal closure. This, in conjunction with a later chapter contrasting the development of speech in the normal child and in the victim of a cleft palate, provides a basis for a proper understanding of what should be the aims of treatment.

An interesting short review of the evolution of cleft palate surgery and the principles underlying the various procedures is enhanced by tables showing speech results with different methods where these are available. In discussing the speech defects, Miss Morley suggests methods of examination and assessment before and after treatment and there is no doubt of the value of this if we are to make any critical survey of the results of surgery and benefit thereby.

The chapters on speech therapy, as well as describing actual technique, embrace the wider and equally important general approach to the problem and might be read with advantage by all coming in contact with these patients.

In a foreword to this edition, Professor T. Pomfret Kilner puts succinctly the present-day approach to the problem of cleft lip and palate.

Miss Morley is to be congratulated on producing an eminently readable and lucid book the value of which lies not least in the emphasis it places on the paramount importance of team work between surgeon, speech therapist and orthodontist in this difficult field.

DENTAL ANATOMY AND PHYSIOLOGY FOR STUDENTS. Second Edition. By James Aitchison, B.Sc., H.D.D., D.D.O., L.D.S., Director of Dental Education, University of Glasgow ; Director of Glasgow Dental Hospital, Lecturer in Dental Surgery, Examiner in Dental Surgery for L.D.S.Glas., Examiner in Dental Anatomy for D.D.O. London : Staples Press Ltd., 1950. Pp. 418. Price 25s.

Ever since reading Le Gros Clarke's " Tissues of the Human Body," the reviewer has prayed for the day when someone would present to the students the story of the dental tissues in the simple but stimulating and erudite manner achieved by that author. Perhaps it is unfair to make the comparison that is implied by this reference to Le Gros Clarke's book, but even judged by more ordinary standards Aitchison's book cannot be described as inspiring. At times it is frankly obscure and occasionally factually inaccurate, as in the statement that gum is perforated by numerous openings of mucous glands and that the concave depression (canine fossa) on the mesial surface of the crown of the maxillary first premolar is at the point of contact with the canine.

How much the illustrations, which consist of many diagrams and photomicrographs, have suffered in reproduction is difficult to assess but many are of poor quality.

The author has an acute sense of the historical aspects of his subject but it is doubtful whether a student's introductory textbook is the correct place for a display of a wide knowledge of the works of the pioneers of histology. The student is likely to be dismayed and bemused by the formidable array of names of these pioneers and their individual views on various details of histology that are catalogued in many chapters.

The author is unorthodox in giving credence to theories that are not widely accepted. For example, C. E. Allen's view that the mesodermal dentinal fibril has evolved into nerve tissue is presented uncritically. The question of additional innervation of the lower premolar teeth from the cutaneous colli or laryngeal nerves is a very controversial one. It is in any case clearly inaccurate to describe the cutaneous colli as a "tiny nerve" (p. 152). The use of the word " albuminoid " as a synonym for organic matter seems a curious antiquity which, when used to describe the organic matter of developing enamel, is misleading.

The author makes periodic digressions into pathology ; there are many references to caries and four pages are devoted to degenerations of the pulp. No doubt the principle of including carefully chosen references to pathology may be defended in the case of a book written for students for whom normal dental histology is to provide the basis for an understanding of disease. Such a statement, however, as " the temperature and pH of the habitat of fishes inhibits dental caries and therefore the tubes of enamel can be open to the periphery " seems highly speculative.

The reviewer feels that the comparative section of the book is also unsatisfactory. The most serious defect from the practical point of view is the lack of distinction that is made between those modifications of the teeth which have occurred during the course of human phylogeny and the numerous modifications which occur in animals very remote from the main line of human evolution. For instance, the student might infer from fig. 118, showing the " evolution of the cheek and lips," that the special conditions present in the elephant (one of the animals figured), had obtained in the direct ancestors of man.

A number of theories of the evolution of the mammalian cheek dentition are described but no attempt is made to evaluate them. No indication is given of the fact that Bolk's theory of dimery is not now widely accepted by comparative odontologists.

There are numerous errors in the zoological classification and nomenclature used, as for instance the inclusion of the " ganoids " with the elasmobranch fishes.

In view of the poor standard of recent textbooks

dealing with comparative dental anatomy, the reviewer wonders whether the dental student would not be well advised to obtain his knowledge of this subject mainly from the excellent textbooks of vertebrate zoology which are now available. Such books give a less detailed account of the teeth, but they do provide an adequate biological perspective, without which the teaching of the subject can have little value.

Eruption of the Teeth in the South African Fossil Ape-men.—The great collection of skulls of *Paranthropus crassidens* made at Swartkrans in the past two years has provided, in addition to the material already described, very satisfactory evidence of the eruption of the permanent teeth. Moreover, it would appear that this demonstrates that there is some justification for the view that the South African ape-men belong to different species and perhaps even to different genera. Below are given the sequence of tooth eruption in monkeys and man-like apes, Sinanthropus, Neanderthal man and Bushman together with that for modern white man, according to Schultz (*Proc. Amer. Phil. Soc.*, 428 (Oct. 1950). Brackets show variation. M_1, I_1, I_2, M_2 (P, P), M_3, C).

Modern White Man (I_1, M_1), I_2 (P, C, P), M_2, M_3. When the succession in *Paranthropus crassidens* is studied, it will be seen that it differs markedly from that in all anthropoids and most monkeys and agrees closely with that of modern man; it may be represented thus: I_1, M_1, I_2 (C, P_1), M_2, P_2, M_3. There are, apparently, still some who hold that *Paranthropus crassidens* is only an anthropoid ape; it is therefore of interest that the present investigation has shown that it has a dental sequence unknown in any living anthropoid or monkey.—Broom, R., and Robinson, J. T. (1951) *Nature, Lond.*, **167**, 443.

Polyostotic Fibrous Dysplasia of Bone.—Polyostotic fibrous dysplasia is a clinical entity with a triad of manifestations, multiple destructive lesions of bone which tend to be unilateral and which are characterised by replacement of bone by fibrous connective tissue, brown pigmentation of areas of the skin which tend to occur on the same side as the bone lesions, and endocrine disturbances such as precocious puberty. It is a condition which has been described under a variety of names and is sometimes known as Albright's syndrome. It is probable that von Recklinghausen's three original cases were of this nature and not cases of hyperparathyroidism. It is not uncommon for the jaws to be affected. Because of the superimposition of other structures radiographs of skull lesions do not give such an accurate detailed picture of the bone structure as do radiographs of the jaws. The interior of the lesion is composed of a rubbery tissue which is gritty—owing to the presence of metaplastic bone trabeculæ. The basic tissue may be either highly cellular or consist of sparsely cellular, highly collagenous tissue. Trabeculæ of poorly calcified bone are distributed randomly through its substance. Basophilic multinuclear giant cells may be present. These are probably formed by a coalescence of the stroma cells and do not seem to be osteoclasts as few are related to Howship's lacunæ. Areas of œdema and of cystic degeneration occur in the stroma and hæmosiderin may be found. It is noteworthy that there is no periosteal reaction. The onset is insidious and usually the first symptoms of pain and bony deformity occur in childhood. The pigmented areas of skin are commonly found over the buttocks, sacrum and spine. Endocrine disturbances are uncommon in the male. Many bony foci are only discovered by radiography. They resemble cystic areas but in fact are areas of bone replaced by fibrous tissue. In many cases the characteristic is a " ground glass " appearance of the bone. There are usually no notable changes in the blood, which differentiates the condition from hyperthyroidism. The cause is unknown, nor is there any effective treatment, but fractures through the lesions usually heal. Two cases are described. One a woman of 50 years who complained of toothache. Radiographs showed a ground glass appearance of the left mandible with some mottling and a patch of sclerosis. In the past she had sustained several fractures. Pigmentation of the left face had been present since birth and other pigmented areas appeared later in life. She began to menstruate at 2½ years. The lower extremities were stunted and deformed. The removal of a tooth in the affected area and of a block of bone was followed by uneventful healing. The histology of the bone resembled that of ossifying fibroma. The second case is that of a woman 54 years old with hyperthyroidism. A few years previously her femur was fractured and a diagnosis of Paget's disease had been made. There was an extensive bony lesion in the left mandible. Two irregular areas of pigmentation were present on the skin of the back.—Robinson, M. (1951) *J. Amer. dent. Ass.*, **42**, 47.

Side-Effects of Chloramphenicol and Aureomycin, with Special Reference to Oral Lesions.—Side-effects are negligible with penicillin but of some significance with streptomycin. They are frequent with chloramphenicol and aureomycin but are not usually of a serious nature. Clinical observations were made on 70 patients receiving chloramphenicol and 56 receiving aureomycin. The most striking changes occurred in the oral cavity. Scrapings of the tongue showed disappearance of the normal flora and the establishment of fungi, usually *C. albicans*. Dryness of the mouth due to true diminution of salivary flow commonly occurred. In many cases the tongue became red and gradual atrophy of the filiform papillæ followed. In about 10 per cent degrees of black hairy tongue developed. A number, especially those receiving aureomycin, developed soreness of the skin and mucosa of the perineum and genitals. The similarity between the changes in the mucous membranes and those of vitamin-B deficiency is commented on.—Tomaszewski, T. (1951) *Brit. med. J.*, **1**, 388.

A Study of the Simultaneous Occurrence of Enterococci, Lactobacilli, and Yeasts in Saliva from Human Beings.—In a proportion of cases of septic root canals treated locally with a penicillin-streptomycin mixture, enterococci resistant to these antibiotics were isolated. The oral cavity itself is the presumed source of these organisms and this investigation was undertaken to ascertain how frequently organisms of this type are found in salivas of apparently healthy persons. Tubes of enterococci-presumptive broth were inoculated with saliva samples from 206 persons. Positive tubes were subcultured and plated to confirm the presence of enterococci and to identify their species. Enterococci were identified in 21·8 per cent of cases.—Williams, N. B., Forbes, M. A., Blau, E., Eickenberg, C. F. (1950) *J. dent. Res.*, **29**, 563.

THE HEALTH SERVICE

NOTES FROM HEADQUARTERS

FROM OUR SPECIAL CORRESPONDENT

Clinical Freedom

During the passage of the National Health Act through Parliament, and the subsequent drafting of the necessary Regulations, the gravest fears were expressed by the Dental Consultative Committee, by the Representative Board of the B.D.A., and indeed by the whole profession regarding the ultimate fate, under the new Service, of a dentist's freedom of clinical judgment in the treatment of his patient. Both the Minister and his officials at the time did their best to allay these fears, pointing out that the Dental Estimates Board would be largely composed of professional men, and that the dental officer service would be available to give a second opinion on cases.

Recent decisions by the Dental Estimates Board must surely show the profession how well-founded were its original fears, and how entirely illusory were the apparent safeguards put forward by the Ministry.

Treatment Vetoed

Two separate practitioners of standing and repute have recently submitted estimates for orthodontic treatment for their respective young patients, and each has received an identically worded reply to the effect that " You are informed that the Board are not prepared to approve a fee for orthodontic treatment at the present time, but will be pleased to consider an estimate at a later date when further development has taken place."

It should now be quite clear to the profession that the Board regard a clinical examination of the patient as being a waste of time, and a second opinion, based on that clinical examination, as being quite unnecessary, and that in future the Board are going to decide arbitrarily the age at which they will permit a dentist to commence orthodontic treatment for his young patients.

The Board's naïve suggestion that, if the dentists concerned are not satisfied with their decision they can appeal, is merely a further abuse of their powers. The appeals machinery was set up to decide cases where there are genuine differences of professional opinion, but in these cases, the Board, not having arranged for a second clinical examination of the patients, were in no position to arrive at a genuine professional opinion as to whether orthodontic treatment should be carried out at once or at a later date. Their decisions in these cases, which might be prejudicial to the best interests of the young patients, can only be regarded as gross interference with the freedom of clinical judgment of the dentists.

The New " Crime "

It is interesting to recall that on June 11, 1947, the then Contact Committee of the Dental Consultative Committee discussed the first draft of the Discipline Regulations with the Ministry. At the outset of the meeting the committee was assured by the Ministry that " The Discipline Regulations must be regarded as concerning only people who behave quite unreasonably ; the normal practitioner will not be concerned with them at all."

Things have indeed moved a long way since then, and we have now reached the stage where it is apparently going to be an offence against the regulations—and therefore presumably quite unreasonable behaviour—for a dentist to put on an estimate the line of treatment that he thinks best for a case if subsequently the R.D.O. recommends a different line of treatment.

A dentist had thirteen cases referred for examination by the R.D.O., of which seven completed cases were found to be entirely satisfactory. Of the other six estimates, the R.D.O. agreed with three, but suggested alternative lines of treatment in the other three. Without further ado, the Dental Estimates Board immediately sent two of these cases to the Executive Council, and suggested that they be referred to the Dental Service Committee, on the grounds that because the dentist's estimate differed from the treatment recommended by the R.D.O. " it appears that the dentist is in breach of paragraph 3 (1) and 7 (1) (c) of the terms of service." It was thus alleged that the dentist had not employed a proper degree of skill and attention, and that he had not set down in the estimate the whole of the treatment necessary in his opinion to render the person dentally fit.

The iniquity of making such charges against a dentist whose only fault seemed to be that he had in fact set down the treatment that *in his opinion* was required to make the patient dentally fit may be judged from the following facts :

In both cases the dentist had estimated for extractions and full dentures. In the first case the R.D.O. recommended scaling and prolonged gum treatment and two fillings; in the second case, the R.D.O., while agreeing that there was some gingival recession, did not think that total extractions were necessary at present, and recommended scaling, four fillings, and the treatment of sensitive cementum, at the same time noting that there were eleven other teeth that had doubtful pits or fissures.

The Dental Service Committee accepted the view of its professional members that these cases merely represented differences of professional opinion, and that they should never have been referred to the committee at all. It is interesting to know that in subsequent discussion of these cases when they were reported to the local dental committee it was obvious that there could be wide divergence of opinions regarding the treatment of these two cases, and yet the Board had alleged lack of skill and attention on the part of the dentist concerned because his opinion differed from that of the R.D.O.

A New Danger to the Profession

It is not only the profession's clinical freedom that is in danger ; its position at Common Law has also been attacked, and may be seriously prejudiced by recent decisions of the Dental Estimates Board. Under Common Law, when a general practitioner undertakes the treatment of any condition he undertakes to bring to it that amount of skill which it is reasonable to expect in any general practitioner, no more and no less, and he is entitled to his fee at the conclusion of the treatment, even if that treatment has not been successful. The Estimates Board care naught for established professional rights under Common Law, and prefer to lay down their own rulings for the profession. There cannot be a

dentist on the Register who has not at some time in his career left behind a root or an apex which fractured in the course of an extraction, taking the view that it was in the best interests of the patient to wait several months, or even possibly years, before removing the remaining portion of the root. Dentists who have done this for health service patients are now finding that no matter how much time has elapsed since the original extraction, and no matter how complicated or difficult the removal of the apex proves to be, the Board take the view that no fee is payable by either the State or the patient.

The next logical step for the Board to take would seem to be to demand to see all fractured teeth, to estimate the proportion of the tooth that has been removed, and to pay the dentist only that proportion of the extraction fee—the balance being payable at some time in the future when he has removed the retained apex. Ultimately the position may possibly be reached where the Board will refuse any payment at all in a case where a tooth has been fractured, but will immediately refer the case to a Dental Service Committee on the grounds that treatment has not been satisfactorily completed, and that there has been lack of skill and attention. If this position is reached, then the Board will have extinguished entirely the Common Law rights of the professional man.

THE CHARGE FOR DENTURES

THE Chancellor of the Exchequer, in his Budget speech, said, with reference to the charges for dentures and spectacles, that the Government regretted having to make these charges but he believed that the vast majority would agree that it was necessary to impose a limit on the expenditure on health. The Government thought they had struck a fair balance between one item of social service and another. The charges would apply where there was the least danger of hardship and perhaps more danger of abuse than anywhere else in the health service.

DENTAL NEWS

DENTAL BOARD OF THE UNITED KINGDOM

Income and Expenditure Account for 1950

INCOME.	£ s. d.	£ s. d.
To FEES :—		
Fees for original Registration, 580 at £2 each	1,160 0 0	
Fees for Retention, 11,710 at £2 2s. each	24,591 0 0	
Fees for Retention, 695 at £1 1s. each	729 15 0	
Fees for Retention, 143 at £1 each	143 0 0	
Fees for Restoration after erasure at £1 each	235 0 0	
Fees for Registration of Additional Qualifications at £1 each	78 0 0	
Fees for Change of Name at 5s. each	9 0 0	
Fees for Extract Certificates at 2s. 6d. each	15 0	
		26,946 10 0
„ SALE OF PUBLICATIONS :—		
Dentists Register (Official Issue) and List of Names, Deaths, etc.	1,187 12 0	
Dentists Register (Office Edition)	557 10 0	
Other Publications	4 15 5	
		1,749 17 5
„ BANK INTEREST	120 1 9	
„ INTEREST ON WAR STOCK 3½%	307 15 10	
„ INTEREST ON DEFENCE BONDS 2½%	62 10 0	
„ INTEREST ON TRANSPORT STOCK 3%	423 14 8	
„ INTEREST ON NATIONAL WAR BONDS 2½%	198 5 4	
„ INTEREST ON SAVINGS BONDS 2½%	506 19 10	
		1,619 7 5
		£30,315 14 10

EXPENDITURE.	£ s. d.	£ s. d.
By FEES AND TRAVELLING EXPENSES :—		
Members, attendance at meetings	2,547 13 0	
General Medical Council, transaction of dental business	300 0 0	
		2,847 13 0
„ PRINTING :—		
Dentists Register	1,389 14 8	
Minutes, Programmes and Reports	281 5 4	
General	231 0 4	
		1,902 0 4
„ SALARIES AND WAGES		6,806 17 6
„ PENSIONS RESERVE :—		
Amount appropriated		4,024 18 6
„ OFFICE EXPENSES :—		
Travelling Expenses	4 5 11	
Postages	368 12 4	
Stationery	428 6 5	
Rates	312 3 10	
Ground Rent	155 0 0	
Heating and Lighting	168 16 11	
Repairs, Cleaning, etc.	382 10 5	
Insurance	32 16 0	
Telephone	99 1 9	
Office Equipment	324 19 1	
Lease Redemption Policies	297 5 0	
	2,573 17 8	
Less Rent received	100 0 0	
		2,473 17 8
„ LAW EXPENSES :—		
Solicitor's Charges	861 13 0	
Disbursements	1,135 11 3	
		1,997 4 3
„ INCOME TAX		808 3 8
„ MISCELLANEOUS EXPENSES :—		
Expenses of Meetings	1,075 19 9	
Auditors' Charges	105 0 0	
Sundries	360 18 1	
		1,541 17 10
„ VISITATION AND INSPECTION OF EXAMINATIONS :—		
Expenses incurred by General Medical Council		1,121 1 7
		23,523 13 10
„ EDUCATIONAL GRANTS		1,180 0 11
„ DENTAL HEALTH EDUCATION	1,883 12 10	
Less Sale of Publications	494 13 6	
		1,388 19 4
„ GRANTS FOR RESEARCH AND FOR POST-GRADUATE DENTAL EDUCATION	1,709 1 4	
Less Sale of Lectures	71 5 4	
		1,637 16 0
		27,730 10 1
„ BALANCE, surplus		2,585 4 9
		£30,315 14 10

USE OF HOSPITAL BY GENERAL PRACTITIONERS

COMPLAINTS have been made in Parliament that Alston, Cumberland, was without a resident dentist. This difficulty has now been overcome by an arrangement which has been made with the Hospitals Special Area Committee for visiting dentists to use the dental surgery at the Cottage Hospital. This scheme is reported to have been approved by the Ministry of Health. The arrangement is apparently analogous to dentists in the Health Service making use of a health centre provided by the local health authority.

WOOD STICKS

ON March 22, Mr. Snow (Litchfield) asked the Minister of Health if he would take steps to ensure for the use of dental patients an adequate supply of non-splintering wooden medicated gum massagers.

In a written reply the Parliamentary Secretary to the Minister said that he was not aware of any shortage of these articles.

THE AMERICAN DENTAL SOCIETY OF EUROPE

THE Annual Meeting of the American Dental Society of Europe will be held at the Ecole Polythechnique, University of Lausanne, Lausanne, from August 1 to 4, 1951.

For other than members and associate members of the Society, there will be a registration fee of 10 dollars or its equivalent in Sterling or in Swiss francs.

Further information may be obtained from the Honorary Secretary, F. Douglas Derrick, 140, Park Lane, London, W.1.

LECTURE ON ORTHODONTIC APPLIANCES

A LECTURE will be given by Mr. Howell Richards, L.D.S.Eng., on "Some Removable Orthodontic Appliances" under the auspices of the Institute of British Surgical Technicians (Dental Section) on Tuesday, May 15, 1951, at 6.30 p.m., at the Eastman Dental Hospital, Gray's Inn Road, London, W.C.1.

Admission tickets are obtainable on sending stamped addressed envelope to the Institute of British Surgical Technicians, 6, Holborn Viaduct, London, E.C.1, or through members of the Institute.

Examination Results

University of Liverpool.—*Final B.D.S.*—R. Edge (Distinction in Dental Prosthetics), S. Gamzu, B. Patterson, P. Selwyn.

Final L.D.S.—Ruth H. Abbott, E. R. W. Clark, T. A. Daley, R. L. Goulden, Pamela L. Heathcote, T. Howley, E. Hughes, N Kendall, E. M. Lewis, J. C. Newman, C. W. Shires, D. J. Traini.

Royal College of Surgeons Edinburgh.—*Final L.D.S.*—J. Allen, F. W. Briglmen, J. J. Campbell, R. A. Darling, K. P. Durkaez, R. R. Farmer, R. A. Hodgkins, F. R. Houareau, A. G. Little, A. L. McLeod, C. M. Norden, G. S. Paterson, T. T. P. Sansome, B. H. Tordoff, A. Wood, A. R. H. Woods.

The Schools

University College Hospital Dental Department.—The Annual Clinical Meeting of the Department is to be held at the National Dental Hospital, Great Portland Street, W.1, on Saturday, May 5, 1951. There will be clinical demonstrations from 10.30 a.m. to 12 noon. In the afternoon, from 2 p.m. to 4.30 p.m. there will be operations under general anæsthesia, and exhibitions of films in the main theatres and the Medical School. The Annual May Ball will be held in the evening at the Mayfair Hotel, Piccadilly from 6.30 p.m. for 7 p.m. to midnight. Tonat Temple and his orchestra. Double tickets £3 10s., students £2 10s., can be obtained from the Hon. Sec. Students' Society, National Dental Hospital, Great Portland Street, London, W.1.

Birth

STEINER.—On March 30 (his brother's birthday) at Exmouth Nursing Home, to Doreen (*née* Beattie) and Walter Steiner, B.D.S., a son (Timothy Alexander).

Our Diary

Thursday, April 19.

Central Counties Branch.—Royal Salop Infirmary, Shrewsbury, 7.30 p.m. "Ulcerations of the Mouth," Brian Hales.

Metropolitan Branch.—13, Hill Street, Berkeley Square, London, W.1, 7.30 p.m. "Clinical Conditions of the Mouth," Professor E. K. Tratman.

Bournemouth and District Section.—Annual Meeting, Grand Hotel, Fir Vale Road, Bournemouth, 8 p.m., preceded by an Informal Dinner, 6.30 for 7 p.m. "Applications of Dentistry to Veterinary Practice," J. Birrell.

Monday, April 23.

The Royal Society of Medicine—Section of Odontology.—1, Wimpole Street, London, W.1, 5.30 p.m. "Periodontal Disease and its Treatment," W. G. Cross.

Tuesday, April 24.

Metropolitan Branch—Hampstead Sub-Section.—Hampstead General Hospital, 8.30 p.m. "Cases in which the G.P. and Dental Practitioner can assist each other in Diagnosis and Treatment," John Eldridge. Visitors welcomed.

Preston, Leyland and Chorley Section.—Victoria and Station Hotel, Preston, 7.30 p.m. Films shown by Mr. W. T. Wishart.

Wednesday, April 25.

Bromley and Beckenham Section.—Annual General Dinner Meeting, Eden Park Hotel, Eden Park, Beckenham, 7.15 p.m.

Friday, April 27.

South Wales and Monmouthshire Branch.—The Royal Hotel, Cardiff, 7 p.m. "Enamel Caries," J. L. Hardwick. *N.B.*—Mr. Hardwick will speak in the absence of Professor E. B. Manley, who is unable to attend.

Oxford Section.—Annual Dinner, Weston Manor Hotel, Weston-on-the-Green, Oxon., 6.30 for 7 p.m.

Friday and Saturday, May 4 *and* 5.

The Continental Dental Society.—Spring Meeting, Eastman Dental Hospital, Gray's Inn Road, London, W.C.1, Friday: 2.30 p.m., "Dental Caries and Its Influence on Public Health," Professor Alfred Kantorowicz. Saturday: 10 a.m., "Sinusitis in Relation to Dental Infection," M. L. Formby; "Legal and Ethical Aspects of Dental Practice," Dr. A. R. French; 2.15 p.m., "An Evaluation of the Articulator Problem for the General Practitioner," P. Saunsbury.

Saturday, May 5.

British Dental Association Hospitals Group—South-West Metropolitan Division.—Clinical Meeting, Dental Department, Westminster Hospital, Horseferry Road, London, S.W.1, 2.30 p.m.

University College Hospital Dental Society.—Annual May Ball, Mayfair Hotel, Piccadilly, London, W.1, 6.30 for 7 p.m. until midnight.

Wessex Branch.—Annual Meeting, Carlton Hotel, Bournemouth, 5 p.m., followed by informal dinner, 6.30 for 7 p.m. "Oral Surgery in General Practice," Sir William Kelsey Fry, *C.B.E.*

Monday, May 7.

The British Society for the Study of Orthodontics.—Manson House, 26, Portland Place, London, W.1, 7.30 p.m. Demonstration Meeting.

Wednesday, May 9.

The East of Scotland Dental Golfing Society.—Competition (Trophy—Brunton Putter), Luffness New, Gullane, 4 p.m.

Thursday, May 17.

Northern Counties Branch.—Sutherland Dental School, Newcastle-on-Tyne, 7 p.m. "Enamel Caries," Professor E. B. Manley.

Friday to Sunday, May 18 *to* 20.

Scottish Branches.—Conjoint Meeting, Dunblane Hydro Hotel, Dunblane, Friday, 6 p.m.; Dinner, 7.30 p.m. Saturday: Morning, Golf Competitions; Afternoon, Table Tennis Tournament; Evening, Dance.

Saturday, May 19.

King's College Hospital Dental Society.—Annual Clinical Meeting, 2 p.m. Past students and students of other hospitals will be welcome.

BRITISH DENTAL JOURNAL

Communications with regard to editorial business should be addressed to THE EDITOR, *BRITISH DENTAL JOURNAL*, **13, Hill Street, Berkeley Square, London, W.1. Telephone: Grosvenor 2761. Telegrams: "Bridention," Audley, London.**

Original Articles and Letters submitted for publication are presumed to be offered to the *British Dental Journal* **only unless the contrary is stated.**

ADVERTISEMENTS should be addressed to the Advertisement Manager, 13, Hill Street, Berkeley Square, London, W.1. Telephone: Grosvenor 2761.

BRITISH DENTAL JOURNAL SUPPLEMENT

April 17, 1951

ASSOCIATION NOTICES

BRITISH DENTAL ASSOCIATION

13, Hill Street, Berkeley Square, London, W.1.
Telegrams: "Bridention," Audley, London.
Telephone Nos.: Grosvenor 1592, 1593.
Journal Office: **Grosvenor 2761.**

XI INTERNATIONAL DENTAL CONGRESS
GROsvenor 3020

Dentists' Provident Society and Dentists' Insurance Committee. Telephone No.: Grosvenor 1172.

BENEVOLENT FUND

The Honorary Treasurer (Mr. E. B. Dowsett) gratefully acknowledges the receipt of the following:

Donations.

Southern Counties Branch, £52 10s.; Southern Counties Branch, £11 11s.; Central Counties Branch, £9 2s.; Metropolitan Branch, £7 16s. 6d.; Kingston and District Section, £5 5s.; J. B. Parfitt, £5; Northern Counties Branch, £4; Hull and East Yorkshire Section, £4; Paisley and District Section, £3 19s.; Northampton and District Section, £3 9s. 6d.; Chere Reenie Lodge No. 2853, £3 3s.; Oxford Section, £2 17s. 3d.; Aberdeen Section, £2 2s.; R. F. Engel, £2 2s.; Finchley Sub-Section, £1 15s.; A. G. Boyland, £1 5s.; R. Gunn Watson, 10s.; W. White 7s. 9d.; J. O. McGee, 7s. 6d.

In Memoriam J. G. T. Hoyes.

Mrs. A. M. Hoyes, £3 3s.

In Memoriam of our colleagues who lost their lives in the war.

Western Counties Branch, £3.

Waste Amalgam.

Box 247, Brighton and District Section, G. W. Casson, N. M. Colquhoun, Messrs. Colyer and Ralston, J. E. C. Dickin, E. C. Grant, Guildford and District Section, T. N. Jeffries, R. C. Kershaw, W. R. Knott, T. M. Martin, Northern Counties Branch, Reading and District Section, F. S. Robinson, A. J. Talbutt, R. Gunn Watson, R. Whyte, Portsmouth and District Section, Messrs. D. A. Bevis, J. P. Davies, C. L. Dawson, R. V. Kenroy, F. C. Murrell, M. Orlans, L. A. Walker-Powell, Surg. Capt. (D) A. Lawrey, and Mr. Noyce.

By the latest sale of waste, a further sum of £72 0s. 5d. has been realised making a total of £3,586 18s. 10d. Will members who have any considerable quantity of waste amalgam kindly forward this to the Honorary Treasurer, 13, Hill Street, Berkeley Square, London, W.1, at their early convenience.

CONFERENCE OF LOCAL DENTAL COMMITTEES

THE conference of representatives of local dental committees and the Council of the Association to consider proposals for the setting up of a General Dental Services Committee is to be held at the Victoria Halls, Bloomsbury, London, W.C.1, on Saturday, May 26, at 10 a.m. Each local dental committee has been invited to send two delegates to the conference.

METROPOLITAN BRANCH STUDY CIRCLE

ROOT Canal Therapy and Apicoectomy.—A course of four lecture-demonstrations is being given by Mr. R. R. Stephens on Tuesdays, May 22 and 29, and June 12 and 19, 1951, at 7 p.m., at the Eastman Dental Hospital, Gray's Inn Road, W.C.1. The course is limited to seven members. Fee, two guineas. Application should be made to Mr. A. C. Mack, 11, Castlebar Road, London, W.5.

ANNUAL MEETING QUESTIONNAIRES

Members will greatly assist the organisers of the Annual Meeting by returning their completed questionnaires as soon as possible.

ANNUAL MEETING
LONDON, JULY 2–6, 1951

President-Elect—Mr. E. B. DOWSETT

PROGRAMME

Monday, July 2.

Business Meetings. 13 *Hill Street*

10.00 a.m. Council.
2.30 p.m. Representative Board.
P.D.O. Group Committee.

Scientific Meetings

2.30 p.m. Guy's Hospital Clinical at Home.

Social Events

9.30 a.m. onwards Golf Meeting.* Moor Park Golf Club, Rickmansworth, Herts.
10.00 a.m. onwards Ladies' Golf Meeting.* Royal Mid-Surrey Golf Club, Richmond.
9.00 p.m. Branch Reception. Horticultural Hall.

Tuesday, July 3.

Business Meetings. Church House

9.30 a.m. Annual Business Meeting.
10.30 a.m. Extraordinary General Meeting.
11.00 a.m. Annual General Meeting of Members.
Installation of President.
Presentation of Visiting Representatives.
12 noon Annual Photograph.
2.00 p.m. Benevolent Fund Annual Meeting.

Scientific Meetings

Morning Operative Demonstrations. Westminster Hospital.
2.30 p.m. Royal Dental Hospital Clinical at Home.

Excursions

2.00 p.m. to 6.30 p.m. (*a*) Windsor Castle—Coach tour.
2.00 p.m. to 9.00 p.m. (*b*) Hampton Court—Coach tour.
2.30 p.m. to 6.30 p.m. Greenwich—River trip.
9.00 p.m. "Printing your Daily Paper."

Section Meetings. Church House

Morning P.D.O. Visits to Clinics.
2.00 p.m. P.D.O. Group Symposium on Dental Hygiene (Speakers: P. G. Capon, G. J. Parfitt, J. V. Bingay.)
2.30 p.m. Hospitals Group Meeting (Speaker: H. F. Humphreys).

Wednesday, July 4.

Scientific Meetings

Morning Operative Demonstrations at St. Bartholomews Hospital.
10.00 a.m. Symposium: The Prevention of Dental Disease. (Speakers: J. Boyes, J. D. King, N. Miller.) Church House.
2.00 p.m. Demonstrations and Films. Horticultural Hall.
2.00 p.m. Institute of Dental Surgery (Eastman Hospital) Clinical At Home.
4.00 p.m. Operative Demonstrations. Middlesex Hospital.

Section Meetings

Afternoon P.D.O. visits to clinics.

* *See* Supplement April 3, 1951, for details of Golf Competitions.

Social Events

12 noon	Lindsay Portrait Presentation. Church House.
1.00 p.m.	P.D.O. Luncheon.
7.15 for 8.00 p.m.	Annual Dinner. Grosvenor House, Park Lane.

Excursions

10 a.m. to 12.30 p.m.	London City—Coach tour.
11 a.m. to 5.30 p.m.	Ford Works (Dagenham). Launch tour.
2.30 p.m.	Carreras Cigarette Factory. Ladies' Visit.

Thursday, July 5.

Business Meeting

4.00 p.m.	Concluding Meeting. Horticultural Hall.

Scientific Meetings

10.00 a.m.	Paper : " Dental Evidence in the Reconstruction of Crime " (Dr. Keith Simpson). Church House.
10.30 a.m.	London Hospital Clinical At Home.
11.30 a.m.	Paper : " The Classification of Odontomes " (Professor E. K. Tratman). Church House.
11.30 a.m.	Paper : " The Organisation of the Oro-Facial Muscles in Relation to Breathing and Feeding (E. Gwynne Evans). Church House.
2.00 p.m.	Demonstrations and Films. Horticultural Hall.
Afternoon	Operative Demonstrations. Children's Hospital, Great Ormond Street.

Section Meetings

Morning	P.D.O. visits to clinics.
5.00 p.m.	Paper : " Parodontal Disease in Expectant and Nursing Mothers " (W. G. Cross). Horticultural Hall.

Excursions

Morning	House of Commons. - Ladies' Tour.
Afternoon	Dress Show at Jacqmar (Ladies).
8 p.m. to 11.00 p.m.	Tower Bridge and Pool of London. Launch Trip.
9.00 p.m.	" Printing your Daily Paper."

Friday, July 6.

Excursions

9 a.m. to 7.00 p.m.	Cambridge. Day tour by rail and coach.
9.15 a.m. to 7 p.m.	Windsor and Marlow. Day tour by coach and steamer.
10 a.m. to 6.00 p.m.	Hatfield House and St. Albans. Day tour by coach.
10 a.m. to 5.30 p.m.	Royal Horticultural Society Gardens at Wisley. Day tour by coach.

P.D.O. Group Notes

ENQUIRIES are being made by some P.D.O.s about steps to be taken in the event of individual local authorities refusing to implement the Dental Whitley Council agreement. The British Medical Association has fixed a time limit for the implementation by local authorities of the award of the Industrial Court to Medical Officers, after which date advertisements from recalcitrant authorities will be refused in the medical journals. It is understood that the next step might be a request from the B.M.A. to the Minister of Labour to declare an official dispute requiring Governmental intervention or action in the Courts to enforce the award. P.D.O.s will have noted that the school teachers in Durham were prepared for mass resignations over the " closed shop " in that county, which move caused the intervention of the Minister of Education under powers granted by the Education Act 1944. The staff side of the Dental Whitley Council will naturally be carefully observing the reactions of individual authorities to the agreement and any steps taken by the B.M.A. will assist in determining future action. The Whitley agreement was freely negotiated, without duress on either side, in a legal manner in accordance with the principles of Whitleyism and it is to be expected that individual local authorities will act in accordance with custom and honour agreements entered into by their own representatives.

Numerous premises for the dental care of children and the priority classes are situated in the London area, some with historic associations with school dentistry and others built on modern lines. In this wide range there are well equipped dental surgeries, orthodontic clinics, X-ray facilities, dental hygienist services and dental aboratories. A feature of the P.D.O. programme for the Annual Meeting of the Association in July will be visits by organised parties to such places of interest where practical programmes are being arranged. The appropriate local authorities and their officers are showing full co-operation and the programme will be published in the near future, when members of the Association will be asked to select, and apply to enter, the organised parties. K. C. B. W.

Branches and Sections

South Wales and Monmouthshire Branch.—A meeting of the Branch was held at the Royal Hotel, Cardiff, on March 15, 1951. In the absence of the President and President-Elect, Mr. Lonnon, Vice-President, took the chair.

Mr. Terence Ward, *M.B.E.*, gave a paper on " The Correction of Facial Deformities," illustrated by some fine lantern slides in colour. He afterwards answered many questions.

The vote of thanks was proposed by Mr. Hoar.

Epsom, Sutton and District Section.—The First Annual Dinner and Dance of the Section was held at the Drift Bridge Hotel, Epsom Downs, on March 2. About one hundred and thirty members and guests were received by the Chairman, Mr. H. C. Scott and Mrs. Scott.

The Toast of the British Dental Association was proposed by Mr. G. V. Lloyd Williams and responded to by the President of the Southern Counties Branch, Mr. B. S. Mead, who complimented the Section on holding such a successful function only five months after the Inaugural meeting. The Toast of the Chairman was proposed by Mr. M. G. Whitten.

Correspondence

Conservation Fees.—Well done 1920 ! The voices of such as yours should be heard more often, and given more publicity.

Of course you are not news. Yours is the plain humdrum existence of a man doing his job to the best of his ability as he has always done and your reward is not in the columns of the daily newspaper nor wholly in your monthly cheque.

But seriously there are many of us in this category and it is proposed to penalise this group still further, they who are doing the greater service to the community and to dentistry. It is to be hoped that our Association will fight tooth and nail to preserve this " happy breed."—J. E. HALL, 64*a*, *Northbrook Street, Newbury, Berks.*

FIVE YEARS AGO

From Mr. EDWARD SAMSON

SIR,—The *British Dental Journal*, in the company of other contemporary journals, offers extracts from its publications of the past, entitled "Fifty Years Ago." By virtue of time these souvenirs have acquired the character of period pieces ; fascinating, quaint or just amusing. Yet such is the tempo of our life—so rapidly do conditions change, and with them opinions—that the pronouncements of only five years ago now seem equally remote, unreal. If our opinions have altered—we can excuse the *volte face* by asserting that it is only the ignorant and bigoted who are not open to conversion—that never to have changed is never to have learned. But when we discover, on reading back, how rapidly our deeply held convictions, loudly proclaimed as the very principles of our professional life—have been replaced, much facile explanation is needed. Incredibly, though the last five years have witnessed these remarkable conversions—to employ a kindly euphemism—no one, attempts to explain, no one to excuse. Perhaps we dentists are all too conscious of the fact that *qui s'excuse, s'accuse* ; or, a more discouraging thought—we may be as little conscious of our varying moods as is the chameleon of his alternating hues.

Some five years ago, justly proud of our growing strength as a profession, of the respect accorded to us by the public as well as by our sister professions, we were noisy in our demands for a title befitting our dignity. Status was the battle-cry. Some there were who insisted that dentists should be known as doctors—if only of dentistry. Others cried that doctors should not be dentists, while nearly all pressed for something—some title which would proclaim to the world how fine a body of men were dentists. Unhappily they were less philosophical than enthusiastic, forgetting that a true dignity founded upon unshakable integrity needs no title to advertise it. Alas ! in five short years we have reached a position when we would give much to be rid of many titles we have unwillingly acquired.

Less than that time ago the Association was fighting stoutly for a number of principles which it asserted must provide the proper basis of a useful National Dental Service—and without which neither the public nor the profession could be usefully served. Indeed, unless these principles were granted the membership would not enter the Service. Surely no re-print is needed now to emphasise how rapidly we have made—and are making dental history. *Clinical Freedom*—what noble intentions, what high-sounding purpose that implies ! The thousands of us who daily seek permission—often denied—to perform treatment according to our judgment will tell us where clinical freedom is. Then Grant-in-Aid, our erstwhile marching song. Without that, no Service. Humbly we have accepted E.C.18 with its ceiling so low that a dentist can hardly stand upright beneath it—as an *ersatz* grant-in-aid. And who now dares to mention, above a whisper, the magic words we used to shout, *the Priority Classes* ?

These with the rest, the principles that were our strength, which, had we fought for them to the end, would have endowed us with greater status than any unearned title, are forgotten in an all-too-recent past. School dentistry, the youngest, and perhaps the strongest of our adopted children, is dying of malnutrition. Even the good intentions of the Priority Classes Committee can scarcely bring colour back to its cheeks, unless they be a blush of embarrassment. While our less scrupulous, or more industrious colleagues earn larger incomes, publicised to our shame ; while young graduates are seduced from the standards of their recent teaching by attractive salaries ; while men who had patiently built up sound practices of high reputation are told that their goodwill is vanished—while these, with all we once respected are gone, dentistry is losing prestige faster than a discounted fellow-traveller. On all sides practitioners are murmuring in their humiliation. Many have not the courage left even to admit they are dentists. And these were the men, along with their colleagues, who such a little while back knew, as their highest ambition, only a desire for their status to be recognised. Now they would give their practices—as many in fact have done for other reasons—to possess a status to be recognised. Perhaps the saddest aspect of this picture is the lethargy, engendered by frustration, that has settled like a fog upon us all. Likened to "spivs" and black-marketeers, the delinquencies of our misguided minorities blazened abroad in banner headlines, discredited and laughed at, not a voice is raised in our defence. A once proud profession cannot summon enough spirit to protect its name. Why ? For the strange reason, we are told, that the Press will not give us space to defend ourselves.

Once we were about to organise a fine body for the dissemination of dental education. The Association was to sponsor a programme designed to teach the public how to care for its teeth—a scheme to cost many thousands. Though the public remains as ignorant as ever, and the treatment we were to teach them to desire we are frequently prohibited from giving—now we cannot raise the energy or money to tell the world that dentistry here is not yet entirely converted to opportunism. The men who carried the banner for the "Five Principles" have not even the strength to wave a flag for the old ethics.

Less amazing than "Fifty Years Ago" is the reading of our proceedings in 1946 and 1947. Are there not a few, with memories fresh enough, and perhaps with strength enough who will remember the principles they applauded, but discarded, and, remembering, save dentistry from sinking even below the level of mediocrity ? Or are they now so tired they can do no more than retire to bed, repeating—

> Sad memory brings the light
> Of other days around me.
> Now such a fading light.

Yours faithfully,
EDWARD SAMSON.

The Quality of Dental Goods.—I read with great interest "Dental Practitioner's" comments in the *B.D.J.* of March 20, on "The Quality of Dental Goods."

While I appreciate his criticism, may I be permitted to point out that the manufacturers in the dental trade are working under the same difficult conditions as the manufacturers in other trades. Today we are not permitted to work as we should like, but depend upon the powers that be. May I give just one instance. For a considerable time we did expensive research and experimental work with a view to making instruments of a very high grade non-corroding steel alloy. The result was a great success as the instruments were not only rust resisting but at the same time kept their cutting edge.

A few months ago we applied for a licence to buy a further quantity of this alloy which was available : the Ministry did not give us the licence, but informed us that they did not consider dental instruments of such importance as to justify granting us this material.

Therefore, do not blame the manufacturer who would appreciate nothing more than to be able to work without encountering obstruction and frustration.

May I add that this Company is not a member of the A.D.M.T. Group.—CHARLES MARSHALL, *Managing Director, Dental Instruments and Accessories Ltd., 320, Regent Street, London, W.1.*

The Salaries Agreement.—In criticising the agreement of the Whitley Council on P.D.O.s salaries, I would first make it clear that I am abundantly satisfied that our representatives obtained the absolute maximum to which the local authorities were willing to go. More than that they could not be expected to accomplish, so all honour and thanks to them. But of the award itself—what can be said? It will certainly relieve the financial misery of the loyal "Old Brigade"—for most of the young men have gone—but having said this there is little or nothing to be added to the credit side. As the cost of living is now double what it was in 1938 this award only belatedly gives back to the school dentist his pre-war standard of remuneration, which was regarded in those days as being pitifully low. This new scale confirms the view that the local authorities regard the school dentist as the lowest form of dental life, and it will effectively ensure that the school dental service, as at present constituted, is doomed to extinction. True to their long tradition of niggardliness the local authorities have spoilt the ship for ha'p'orth of tar. Had they at least given parity with the Ministry of Health's "Health Centre Scale" it would have given us a fighting chance, but to offer £800—rising in *nine years* to £1,250—with only a ten to one chance of getting another £200 in four years, as a Senior D.O.—is just making sure that that no energetic and ambitious young graduate will ever choose the tiring and difficult work of school dentistry when every other alternative offers something much better. It all points to the fact that until the service is taken entirely out of the hands of the local authorities the vast majority of the children of this country will continue to suffer dental neglect, and the great mass of dental defects of the adult population will go on costing the taxpayers untold millions.

I would suggest that the P.D.O. Group should now direct its efforts towards securing a school dental service emancipated from the fetters of local government—a service free from the domination of other professions and given the dignity it deserves as the spearhead of the attack on dental disease.—H. D. HALL, *White Lodge, Manor Close, Felpham, Bognor Regis.*

The Cost of the Service.—I notice the little note about the reply of the Minister of Health to Sir H. Lucas-Tooth about the division of the total cost of the General Dental Health Service: examinations 5 per cent; extractions, 6 per cent; conservative work, 28 per cent; dentures, 61 per cent. It reminds me of a Party Political broadcast by Miss Florence Horsburgh in which she mentioned an old lady of about 90 with a new full upper and lower, while it was difficult for young children to get treatment.

Perhaps we are not without blame. Certainly the payment of a proportion of these fees by the patient would help towards 61 per cent of the amount paid out for the service.—E. BRODIE CARPENTER, *Oakleys, Uxbridge Road, Hatch End, Middlesex.*

CHANGES OF ADDRESS

Notices of Members' Changes of Address should be addressed to the general office of the Association, and not to the Editor or the Journal Office. To avoid errors, name and both addresses should be written in block letters.

(S.C.) AINSLEY, W., from 1a, The Broadway, Tarring Road, West Worthing, to c/o James F. G. Wood, West View, Lindum Road, Worthing, Sussex.

(W.L. to S.W.) CAPLETON, L. H., from Roche Lea, Laurel Road, St. Helens, Lancs., to Derrymore, Llandrindod Wells, Radnorshire.

(M.) CORLESS, D. R., from 21, Wimborne Gardens, to 112, The Avenue, Ealing, London, W.13.

(E.S.) DOUGARY, A. H. M. (Miss), from 10, Main Street, Lochgelly, to 24, Bowling Green Street, Cowdenbeath, Fife.

(W. to N.C.) FARRELL, J. H., from Rooksdown House Hospital, Park Prewett, Basingstoke, to Sutherland Dental School, Northumberland Road, Newcastle upon Tyne.

(E.S.) FOREMAN, J. M., from 2, Midmar Gardens, Edinburgh, 10, to 10, Pilrig Street, Edinburgh, 6.

(E.C.) FROST, M., from 20, Crouch Street, to 54, North Hill, Colchester, Essex.

(E.M.) GRAY, M. J. G. (Miss), from 46 to 185, Cossington Road, Sileby, Leics.

(E.M.) HALL, W. T., from 143, Radbourne Street, to Tall Trees, Cooper Street, Derby.

(N.S.) HARVEY, Alexander, from Nicolson's Temperance Hotel, Somerled Square, to Drimgorm, Portree, Isle of Skye.

(S.W.) JONES, P. D., from 56, Stanwell Road, to Williston, Lavernock Road, Penarth, Glam.

(E.M. to Y.) KEILLER, A. B. (Lieutenant, R.A.D.C.), from 503 Army Dental Centre, Ranby Camp, Retford, Notts, to 503 Army Dental Centre, Victoria Barracks, Beverley, E. Yorks.

(M.) KOSLOFF, M. (Miss), from 31, Redington Road, to 17, Holly Mount, Hampstead, London, N.W.3.

(N.I.) McKENNA, A. H., from 1, Hope Villas, Victoria Avenue, to Cable Road, Whitehead, Co. Antrim.

(E.M. to M.) MILLS, M. G. (Miss), from Pinewoods, Chesterfield Road, Matlock, Derby., to Eastman Dental Hospital, Gray's Inn Road, London, W.C.1.

(E.L. to Y.) O'NEILL, G. C. F., from Royal Army Dental Corps, 2, Castle Hill Road, Jericho, Bury, Lancs., to 191, Roundhay Road, Leeds, 8.

(N.I.) PARKER, E. M. (Miss), from c/o Mrs. Richardson, Kilyman Road, to 7, Howard Terrace, Dungannon, Co. Tyrone, N.I.

(E.C. to S.C.) PERRYMAN, J. V., from the Moorings, Ditton Road, Langley, Bucks., to 20, Parsonage Road, Englefield Green, Surrey.

(E.S.) PIPER, J. G. A., from 11, Keith Crescent, Blackhall, Edinburgh, 4, to 4, Peel Terrace, Edinburgh, 9.

(M.) POWER, H. L., from 270, Earl's Court Road, London, S.W.5, to Park Lodge, Victoria Drive, Wimbledon Common, London, S.W.19.

(E.C. to W.C.) PRIEST, P. D., from 325, Willow Road, Enfield, Middx., to Plainsfield, Crewkerne, Somerset.

(S.C. to M.) RICHARDS, L. G., from 50, Old Road, East Gravesend, Kent, to Eastman Dental Hospital, Gray's Inn Road, London, W.C.1.

(C.C. to W.L.) RUSSELL, G. H. H., from Riverside, Berwick Road, Shrewsbury, to 167, Church Road, St. Annes-on-Sea, Lancs.

(M. to S.C.) RYBA, G. E., from 104, Peter's Court, Porchester Road, London, W.2, to 240, Holtye Road, East Grinstead, Sussex.

(C.C.) SEFTON-FIDDIAN, G., from 142, Salisbury Road, to 97, Oxford Road, Moseley, Birmingham, 13.

(M. to E.C.) STEWART, W., from 56, Claremont Road, Highgate London, N.6, to 51, Milton Crescent, Ilford, Essex.

(E.C. to W.) THOMSON, J. H., from 52, Springfield Drive, Westcliff-on-Sea, to 61, Granby Grove, Highfield, Southampton.

(E.C.) TRICK, W. L., from 30, Market Place, to 5, Pump Square, Boston, Lincs.

(E.L.) TURNER, S. E. (Jnr.), from 69, Kingsway, Levenshulme, Manchester, 19, to 442, Buxton Road, Steeping Hill, Stockport.

(S.C.) WITHERS, T. E., from 36, Station Road, to 36, Upper High Street, Epsom, Surrey.

(S.C.) WILLIS, R. C. S., from 105, Newton Wood Road, to 31, Woodfield Lane, Ashtead, Surrey.

(C.C.) WRIGHT, T. J., from 36, Park Hill Road, to 351, High Street, Harborne, Birmingham, 17.

NEW MEMBERS

(E.S.) DONALDSON, Archibald Thomson, L.D.S.Edin., 12, Osborne Terrace, Edinburgh, 12.

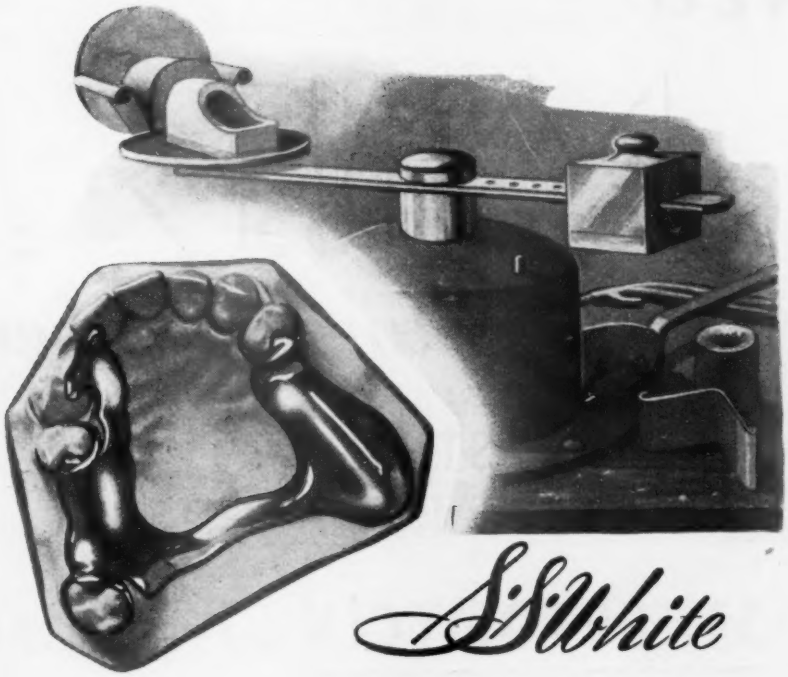
(S.C.) DYER, Harold Ernest, B.D.S.Lond., 15, High Street, Gosport, Hants.

(W.) FLETT, Arthur Marwick, L.D.S.Manc. (Lieutenant, Royal Army Dental Corps), Officers' Mess, No. 1 Trg. Bn. R.E.M.E., Blandford Camp, Blandford, Dorset.

(C.C.) SHERRATT, Ronald Gervaise Dennis, L.D.S.Eng. (Lieutenant, Royal Army Dental Corps), 166, Lower Belgrave Road, Longton, Stoke-on-Trent.

FORTHCOMING MEETINGS AT HEADQUARTERS.

April 19	Council	10.00 a.m.
„ 20	Representative Board	10.30 a.m.
„ 21	Representative Board	10.00 a.m.
May 7	Health Acts Committee	9.30 a.m.
„ 7	Defence Services Committee	2.30 p.m.
„ 25	Council	10.00 a.m.



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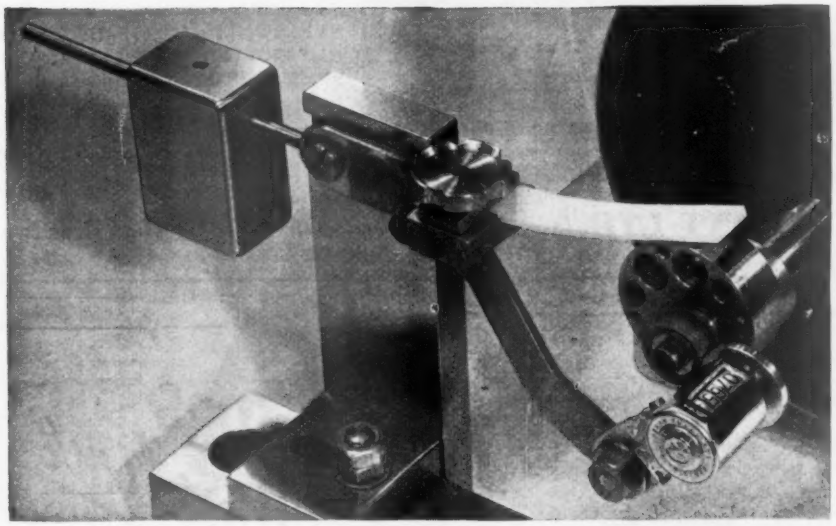

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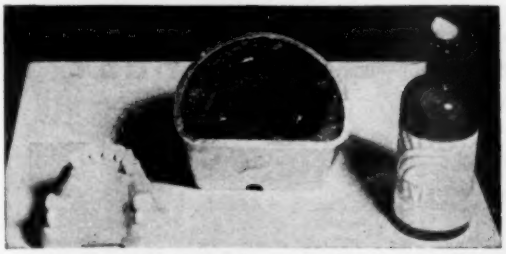

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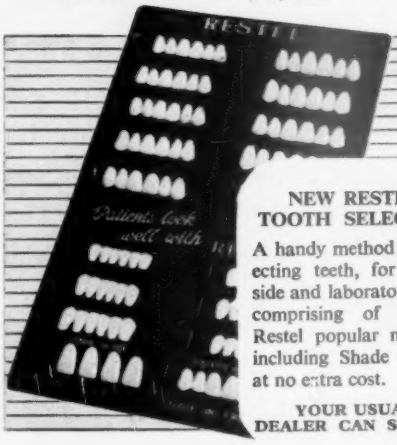

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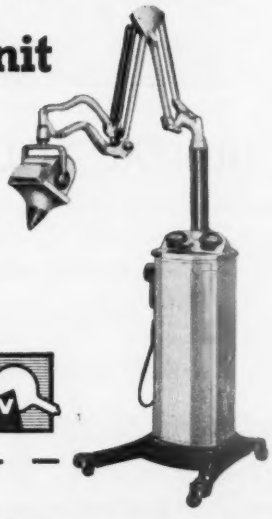

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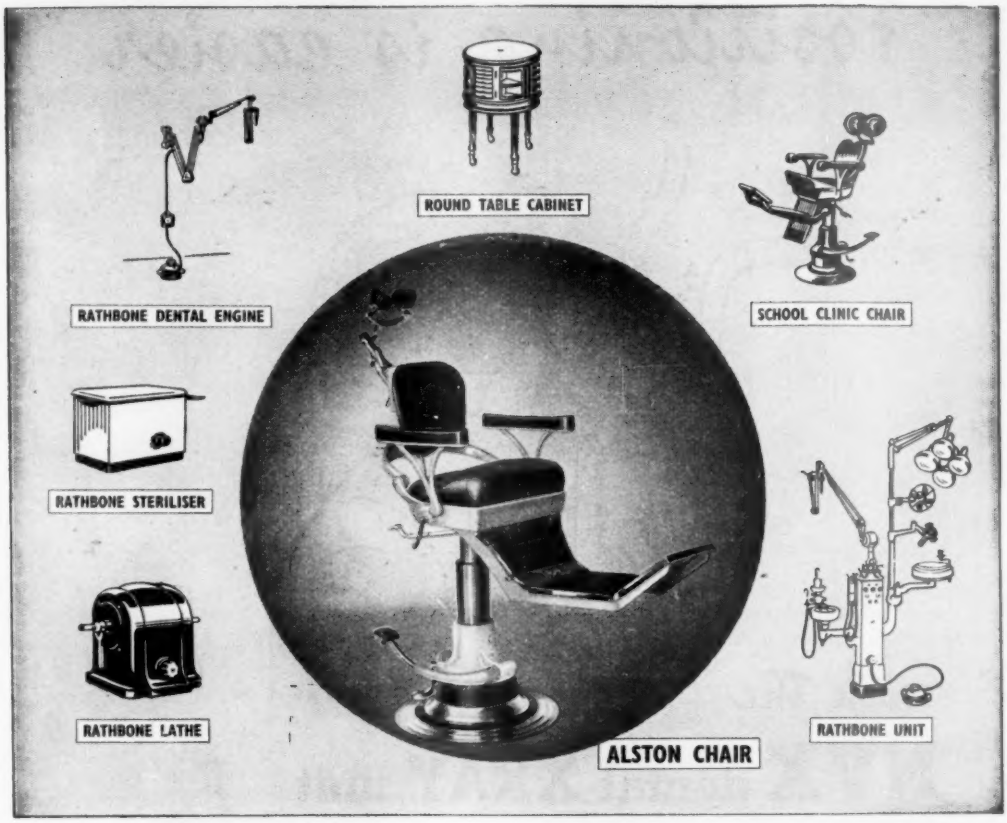

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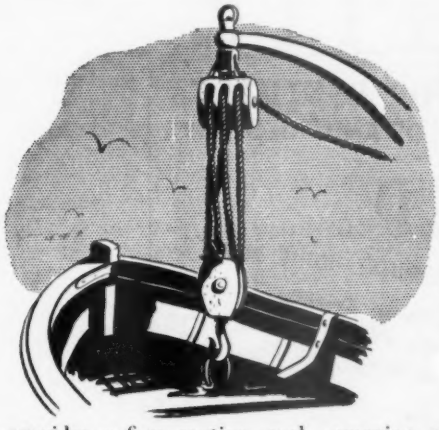

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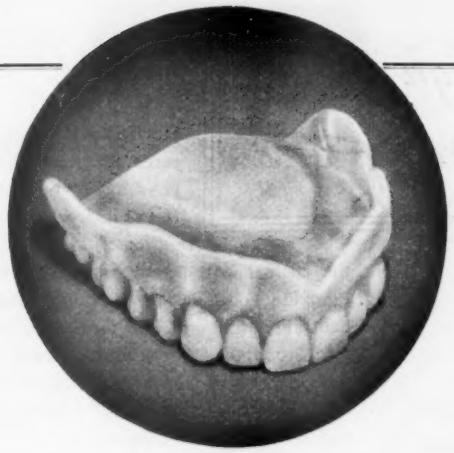

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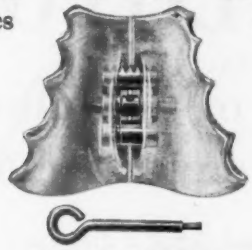

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